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LEARNING HOW TO FIGHT: CONNECTIONS BETWEEN CONFLICT RESOLUTION PATTERNS IN MARITAL AND SIBLING RELATIONSHIPS

A Dissertation Presented

by

ELIZABETH KRISTINE TURNER

Submitted to the Graduate School of the
University of Massachusetts, Amherst in Partial Fulfillment
of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

September 2007

Clinical Psychology

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ELIZABETH KRISTINE TURNER

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ABSTRACT

LEARNING HOW TO FIGHT: CONNECTIONS BETWEEN CONFLICT RESOLUTION PATTERNS IN MARITAL AND SIBLING RELATIONSHIPS

SEPTEMBER 2007

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Understanding the development and expression of conflict management styles within sibling relationships has important implications for identifying interventions for fostering children's social competence. The present study investigated the relationship between parents' early and concurrent marital conflict resolution styles and their first-grade child's use of constructive and destructive conflict management strategies with their siblings. Using both Social Learning Theory (Bandura, 1969) and Family Systems Theory (Minuchin, 1985), the current study explored parents' styles of marital conflict resolution as predictors of children's observed sibling conflict strategies. Participants included 50 mothers and fathers, their first-grade child and next younger sibling, within a 3.5 year range. Families from the project were drawn from a larger longitudinal study investigating the transition to parenthood in 153 working-class, dual-earner couples. Self-report scales measuring marital conflict resolution (e.g., Positive Problem Solving, Engagement, Withdrawal, and Compliance) were completed by each parent across the

transition to parenthood and five years later when their oldest child entered the first grade. At a 5-year follow-up home visit, parents rated their oldest child's behavior toward their sibling across three dimensions (e.g., Positive Involvement, Conflict and Rivalry, Avoidance). In addition, videotaped free-play sibling observations were conducted to assess sibling positive and negative connectedness as well as sibling conflict resolution styles. Observational data revealed that fathers' use of compliance strategies was associated with siblings' greater likelihood of being classified as using only destructive strategies and engaging in fewer conflicts. Mothers' conflict styles were more strongly implicated in parent reports of sibling behavior. Parents' conflict resolution styles were most linked to negative sibling interactions, rather than positive involvement. The findings highlight the balance of destructive marital conflict styles relative to constructive styles in understanding parent reports of the sibling relationship. Future research should consider particular couple patterns of conflict styles as potential influences on sibling conflict behaviors.

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CHAPTER 1

INTRODUCTION

"After all, it is our brothers and sisters who see us as no one else does, who are experts at how to both please and annoy us, and who bring out the best and the worst of us." (Kramer & Banks, 2005)

Sibling relationships provide a unique context to learn effective strategies to facilitate future interactions with others. Research, however, is only beginning to understand the importance of sibling relationships for child development (Cicerelli, 1995). Siblings provide an important child-child relationship in which communication patterns may be learned and practiced. The quality of sibling relationships has been linked with positive and negative behaviors with friends and peers (Bank, Patterson, & Reid, 1996; Stocker, 1994; Stormshak, Bellanti, Bierman, Coie, Dodge, Greenberg, Lochman, & McMahon, 1996). Further, the effects of chronic and coercive sibling conflict have been linked to the development and maintenance of depression as well as poor social competence and future delinquency (Brody, 1998; Stocker, 1994; Stormshak et al., 1996). Severe sibling conflict has been associated with peer rejection and aggression (Bank, Patterson, & Reid, 1996), which, in turn, have been linked to deleterious child and adolescent outcomes, including higher rates of substance use, delinquency, and sexual behavior (Bierman & Wargo, 1995; Prinstein & Greca, 2004).

While recognizing associations between chronic sibling conflict and negative developmental outcomes (e.g., poor social competence, delinquency), emerging research in the field of sibling relationships has begun to view conflict experiences with one's brothers and sisters with a new, more positive, lens. In fact, conflict within the context of a warm and supportive sibling relationship has been linked to positive child outcomes

including increased social competence, emotion regulation, and attentional abilities (Brody, 1998; Stormshak et al., 1996). Through the experience of sibling conflict, children may also develop effective conflict management strategies that facilitate social perspective-taking and successful peer interactions (Brody, 1998; Cicerelli, 1995; Hartup & Laursen, 1993). Understanding the development and expression of constructive and destructive conflict management styles within sibling relationships has important implications for identifying interventions for fostering children's social competence.

The larger family context provides the child's first experience with close interpersonal relationships. Through family interactions, children begin to observe and practice styles of communicating and managing conflict with others. Several prominent theories have been forwarded to account for the processes through which healthy sibling relationships develop. Both Social Learning Theory (Bandura, 1969) and Family Systems Theory (e.g., Minuchin, 1985) propose that children develop and model conflict management strategies consistent with their parents' styles of marital conflict resolution.

From a methodological standpoint, the majority of research linking family dynamics to sibling relationships has utilized parent questionnaires, most often relying on maternal reports, of marital and sibling relations (e.g., Noller, Feeney, Peterson, & Sheehan, 1995; Reese-Weber, 2000). Few researchers have examined the relationship between marital and sibling conflict resolution styles using observational data on sibling interactions as well as reports from both members of the marital dyad. Moreover, limited research has explored the potential connection between marital conflict resolution styles and sibling relations. Studies that have explored connections between marital and sibling relations typically focus on the development of negative or highly conflictual sibling

relationships (e.g., Brody, Stoneman, McCoy, & Forehand, 1992). The present study investigated the relationship between parents' early and current marital conflict resolution styles and their first-grade child's use of constructive and destructive conflict management strategies with their siblings. This project placed a special emphasis on first graders' effective and positive strategies of negotiating conflict. The primary goal of the current study was to explore linkages between parents' styles of conflict resolution in their marriages and children's use of constructive strategies for negotiating conflict that may facilitate future social relationships and interpersonal problem-solving.

CHAPTER 2

LITERATURE REVIEW

Sibling Relationships as Unique Developmental Contexts

Relationships between siblings are unique in several ways. Unlike many relationships, becoming a sibling is not a choice, but an involuntary position that typically comprises the longest relationship an individual will experience in his or her lifetime (Bigelow, Tenson, & Lewko, 1996; Cicerelli, 1995). Nearly 80% of children in the United States have at least one sibling (Dunn, 1996). In addition, the amount of time siblings spend with one another is unparalleled by any other interpersonal relationship during childhood. Children and adolescents typically experience intimate and daily contact with their siblings (McHale & Crouter, 1996). Interactions between siblings often involve both intense positive and negative affect (Dunn, 1993; Howe, Aquan-Assee, & Bukoski, 2001). In fact, the positive and negative qualities of this relationship remain relatively stable throughout childhood (Dunn, 1996). Sibling relationships have been characterized by "relative egalitarianism," involving elements of both complementary and reciprocal roles (Cicerelli, 1995; Jenkins Tucker, McHale, & Crouter, 2001). The complementary nature of sibling relationships resembles the power dynamic in asymmetrical parent-child relationships, in which sibling age affords certain privileges and responsibilities. In contrast, siblings also perform reciprocal roles mirroring the more balanced nature of peer relationships (e.g., providing support regarding family concerns) (Jenkins et al., 2001).

Sibling Relationship as an Influence on Adjustment and Social Development

Sibling relationships afford the potential for the development of various positive and negative adjustment outcomes. The role of siblings as socializing agents was recognized as early as four decades ago (Irish, 1964). However, our understanding of the processes and development of siblings' roles in social and emotional development, especially in terms of positive functioning, remains somewhat limited (Teti, 2002). Recent research indicates that sibling interactions may help children acquire a better grasp of their social worlds by facilitating understanding of social rules (Dunn, 1985; 1993; 1996), social competence (Brody, Kim, McBride Murry, & Brown, 2003), and emotional understanding or affective perspective-taking (Dunn, 1993; Howe, Aquan-Assee, & Bukoski, 2001; Howe & Ross, 1990). The relative permanency of sibling relationships may provide children with the flexibility and security to successfully learn and practice conflict management strategies (Howe, Rinaldi, Jennings, & Petrakos, 2002; Rinaldi & Howe, 1998). Sibling relationships have also been positively implicated in the development of cognitive (Dunn, 1993) and language abilities (Brody, 1998).

Sibling interactions may negatively shape behavior and adjustment as well. The majority of research on sibling relationships has focused on the potential negative influence that brothers and sisters may have on one another (e.g., Bank, Patterson, & Reid, 1996). Highly conflictual and negative sibling relationships have been associated with future delinquency, antisocial behavior, and poor communication skills (Bank, Patterson, & Reid, 1996; Conger, Conger, & Elder, 1994). Further, Patterson and Stouthamer-Loeber (1984) have demonstrated that sibling relations may serve as potential "training grounds" for aggressive behavior. He and his colleagues (1996) argue that "...sibling interactions constitute a significant portion of the aggressive child's

experience in learning to use antisocial behavior" (p. 201). Siblings may model and shape one another's behavior. Parents as well as siblings may interact with aggressive children in coercive patterns in which inappropriate behaviors become negatively reinforced, thus continuing the detrimental cycle. In addition, aggressive siblings' coercive interactions with one another often generalize to school and peer relationships (Bank, Patterson, & Reid, 1996).

Importance of Sibling Conflict as Research Focus

Sibling experiences of conflict provide an important context to examine various developmental outcomes. Parents view sibling conflict as an area of concern for their children's development and emotional well-being (Dunn, 1993; Kramer & Baron, 1995). Research has documented that a certain amount of conflict between siblings is normal (e.g., Dunn, 1985). However, prolonged or severe sibling conflict has been linked to the development and maintenance of several detrimental child and adolescent outcomes including depressed mood, loneliness, and low self-esteem (Stocker, 1994) as well as teacher ratings of aggression, academic difficulties, and poor social competence (Brody, 1998; Stormshak et al., 1996). Strong evidence for the association between severe sibling conflict and negative child outcomes emerges from studies employing longitudinal designs. For example, Stocker, Burwell, & Briggs (2002), in their study of sibling conflict in middle-class families, found that 10-year-old children's reports of conflict with their younger siblings predicted increased anxiety and delinquent behavior in the older sibling two years later, above and beyond observed mother-child and father-child hostility, as well as maternal-reported marital conflict. Limited research, however, has examined the strategies children employ during conflict interactions with their siblings

and how these particular communication patterns may relate to future well-being and social competence.

Potential Contributions of Sibling Conflict to Social Development

While acknowledging associations between chronic sibling conflict and negative child outcomes such as future aggression, low self-esteem, and social difficulties (e.g. Brody, 1998), recent research points to the potential positive aspects of sibling conflict (Brody, 1998; Cicerelli, 1995; Hartup & Laursen, 1993). Authors have conceptualized sibling conflict as a "valuable childhood experience" (p. 9, Cicerelli, 1995) that may facilitate social perspective-taking and effective styles of argument. In fact, the sibling relationship provides a relatively safe environment to develop and practice social relationships and conflict resolution knowledge (Bigelow, Tesson, & Lewko, 1996). Conflictual sibling interactions "provide [children with] an opportunity to vent their emotions, express their feelings, and practice open communication" (p. 17) (Brody, 1998). Further, the experience of frequent arguments with a sibling has been correlated with future success on sociocognitive tasks (Slomkowski & Dunn, 1992). The following section will explore dimensions of sibling conflict with special attention to descriptions of constructive and destructive styles of conflict resolution that may be especially important to the development of social skills.

Definitions of Sibling Conflict

Conflict has been defined as "a social event involving mutual opposition and disagreement" (Cicerelli, 1995). The literature typically characterizes sibling conflict in terms of the conflict issue, frequency, styles of resolution, and outcome (Cicerelli, 1995; DeHart, 1999; Hartup & Laursen, 1993; Howe et al., 2002). Research on children's

conflicts encourages a developmental approach to understanding their topics of disagreement. During preschool and early childhood, conflict issues typically involve arguments over objects and possessions as well as access to the primary caregiver. By the age of six and early school years, children's arguments begin to shift to their social world and interpersonal relationships (DeHart, 1999; Hartup & Laursen, 1993). With increasing age, children also become more adept at shifting topics of disagreement which may hinder successful conflict resolution (Howe et al., 2002).

Conflict Frequency

Much of the concern regarding sibling conflict involves the frequency, or how often, children fight or argue. However, research on sibling relationships has noted that the frequency of conflict alone is not the sole link to associated child outcomes (Bigelow, Tesson, & Lewko, 1996; Dunn, 1996; Dunn & Herrera, 1997; Howe et al., 2002; Rinaldi & Howe, 1998). Rather, the presence of warmth in the relationship and the manner of conflict resolution more strongly predict child adjustment (Bigelow, Tesson, & Lewko, 1996; Dunn, 1996; Dunn & Herrera, 1997; Howe et al., 2002; Rinaldi & Howe, 1998). Brody (1998) posits a "balance hypothesis" of sibling conflict, suggesting that the amount of conflict relative to the presence of warmth in the relationship, rather than absolute levels of either quality alone, better accounts for associated outcomes. In their observational research with middle-class, preschool children and their siblings, Howe and Ross (1990) found positive associations between children's comments to their mother regarding their younger siblings' feelings and wants with their levels of both positive (e.g., laughing, smiling) and negative (e.g., protesting, poking) behaviors toward their younger sibling. McGuire, McHale, and Updegraff (1996) found similar results in their

longitudinal study with middle-class, school-age, siblings and their parents. In their research, children who reported high levels of both warmth and hostility with their sibling rated a high degree of satisfaction and positive relations with their siblings. This emphasis on a balance of sibling conflict and warmth facilitates the development of prosocial skills and conflict management strategies that may generalize to relationships outside the family (Brody, 1998; Stormshak et al., 1996). Stormshak and colleagues' (1996) longitudinal research with aggressive first- and second-graders and their siblings provides strong support for this balance hypothesis. In their study, siblings classified as "involved," in which the level of conflict equaled the amount of relationship warmth, were rated higher in social competence, emotion regulation, and attentional abilities by their teachers than "supportive" dyads, in which the level of warmth exceeded the level of relationship conflict. Therefore, even for aggressive children, the ability to "work through conflicts in the context of a warm and supportive sibling relationship (p. 81)" may contribute to future relationship and academic success.

Understanding Sibling Conflict Management Patterns – Constructive versus Destructive Styles

Greater understanding of the manner in which children fight or argue with one another, as well as how these styles are learned and develop, is important. Sibling conflict management patterns have been characterized in terms of constructive and destructive styles (Cicerelli, 1995; Howe et al., 2002; Rinaldi, 2002; Rinaldi & Howe, 1998). Deutsch (1973) was one of the first theorists to conceptualize conflict in terms of constructive and destructive patterns. Constructive patterns involve such strategies as negotiation, brainstorming, and mutual problem-solving. Research has linked

constructive conflict resolution strategies with fostering interpersonal growth and individualization, providing a context to discover and practice social rules, and developing successful negotiation styles (Hartup & Laursen, 1993; Rinaldi & Howe, 1998). Constructive strategies typically evoke low emotional intensity, maintain social interactions, and contain disagreements around the focal conflict issue (Cicerelli, 1995; Deutsch, 1973; Howe et al., 2002; Rinaldi & Howe, 1998). In contrast, destructive conflict resolution styles often involve coercive behavior, including negative verbal or physical behavior, threats, manipulation, and disengagement. These strategies often leave both participants dissatisfied, evoking high emotional intensity, and where the topic of conflict frequently spreads beyond the initial conflict issue (Deutsch, 1973; Howe et al., 2002; Rinaldi & Howe, 1998). Destructive conflict resolution patterns have been associated with negative sibling relationships and peer ratings (Cicerelli, 1995; Rinaldi, 2002).

Emerging research in the field of sibling relationships has begun to link constructive and destructive conflict management strategies to communication patterns within the family. The following section will outline several theoretical conceptualizations that provide useful frameworks for understanding the ways in which healthy sibling relationships, specifically the use of constructive conflict resolution strategies, may develop within the context of the family. It will place a particular emphasis on the role of the marital communication system as a key factor related to the development of sibling constructive and destructive conflict resolution patterns.

Theoretical Approaches to Understanding the Linkages Between Marital and Sibling Relationships

Several theories have been proposed to account for potential links between family processes and child and sibling developmental outcomes. This section will begin by exploring two of the most well-documented theories that provide foundations for understanding potential connections between marital and sibling communication patterns, mainly Social Learning Theory (e.g., Bandura, 1977; 1989; Patterson & Southamer-Loeber, 1984) and Family Systems Theory (e.g., Minuchin, 1985). In addition, several, more recent, theoretical accounts of family processes will follow, including Davies and Cummings' (1994) Emotional Security Hypothesis as well as Grych and Fincham's (1990) Cognitive-Contextual Hypothesis. While these hypotheses do not constitute a primary focus of the current study, they describe additional processes by which marital conflict, in particular, may relate to child well-being.

Social learning theory (e.g., Bandura, 1977; 1989; Patterson & Southamer-Loeber, 1984) posits that children learn and develop effective strategies by observing and modeling their parents' behavior in conflict interactions. Children's behavior in relationships develops, in part, from observing and imitating the behavior of persons of higher status, most notably their parents, in their relationships (Bandura, 1989, Reese-Weber, 2000). Accordingly, Social Learning theory places parents as role models of appropriate behavior for their children. This theory has guided the majority of research exploring children's modeling of parent destructive conflict patterns in the development of negative or aggressive behaviors (e.g., Grych & Fincham, 1990; Patterson & Southamer-Loeber, 1984).

In addition, social learning theory accounts for the development of constructive and destructive conflict management patterns in children's relationships. Within conflict

interactions, children may model their parents' strategies for managing marital conflict, including both constructive (e.g., problem-solving, compromise) and destructive (e.g., hostility, withdrawal) patterns (Noller, Feeney, Peterson, & Sheehan, 1995). As such, it provides a foundation to understand the development of both functional and dysfunctional behaviors (Zimet & Jacob, 2001).

In family systems theory, the sibling subsystem comprises only one part of an interrelated family system and, as such, dimensions of sibling conflict are likely influenced by multiple factors (Brody, 1998; Brody, Stoneman, McCoy, & Forehand, 1992). Family systems theory places an emphasis on the interdependence and reciprocal processes linking family subsystems (Minuchin, 1985). According to family systems theory, bidirectional relationships between different family subsystems (e.g., marital, sibling) serve to regulate and maintain the functioning of the family system as a whole. Thus, family systems theory may account for the ways in which conflict patterns in the parents' marriage may influence, and also be influenced by, patterns in their children's sibling relationships.

More recent theories have highlighted processes whereby parents' marriage and marital quality functions as key factors related to children's emotional and social well-being (e.g., Cummings & Davies, 2002; Grych & Fincham, 1990). Marital conflict, in particular, has been implicated as a strong predictor of child difficulties (e.g., Rutter & Quinton, 1984), including peer relationship and academic problems (Cummings & Davies, 1994). In fact, with increased family stress, including lower socioeconomic status (SES), marital conflict acts as a particularly powerful risk factor for child conduct problems (Jouriles, Bourg, & Farris, 1991).

Given marital conflict's well-documented effects on children, researchers have expanded investigations to examine specific processes that link dimensions of the marital relationship to negative effects on children's emotional, social, and academic well-being (e.g., Davies & Cummings, 1994). Specifically investigators aim to understand "how" marital conflict affects children's development (e.g., Cummings & Cummings, 1988; Cummings & Davies, 2002). Davies and Cummings (1994) propose an Emotional Security Hypothesis, developed from attachment theory (Bowlby, 1969), to understand the relationship between marital conflict and child outcomes. This hypothesis predicts that exposure to chronic and destructive parent conflict negatively impacts children's level of emotional arousal influencing the development of internalizing and externalizing disorders.

Grych and Fincham (1990) suggest a Cognitive-Contextual Hypothesis to account for processes involved in children's response to marital conflict. This hypothesis emphasizes the importance of children's appraisals of their parents' marital conflict on children's well-being, including their perceived role in the conflict, degree of perceived threat, and attributions of cause and blame in the conflict. According to this model, the process by which children actively attempt to interpret and make sense of their parents' conflict interactions plays an integral role in the development of negative outcomes. While Social Learning (Bandura, 1977, 1989) and Family Systems (e.g., Minuchin, 1985) theories primarily guide the current study, the project is informed by Davies and Cummings (1994) Emotional Security Hypothesis and Grych and Fincham's (1990) Cognitive-Contextual Model.

The following section reviews the literature on parents' marital conflict with an eye towards its important effects on child and sibling relationship development. Specifically, marital communication styles, including constructive and destructive conflict resolution patterns, will be explored. Finally, this review concludes with a discussion of the emerging research in the field of sibling relationships that begins to link conflict resolution strategies across the marital and sibling subsystems.

Conceptualizing Marital Conflict

Marital conflict has been associated with negative child outcomes, although researchers are quick to emphasize that conflict or disagreement is a normal part of marital relations (e.g., Cummings & Davies, 2002). Sillars, Canary, and Tafoya (2004) argue that the occurrence of conflict within the marital relationship is neither good nor bad in itself, but rather it is the way in which couples respond to conflict that becomes important to both adult and child outcomes. Similar to Brody's (1998) "balance hypothesis" of sibling conflict in the context of relationship warmth, Gottman (1994) presents a parallel model to understanding marital conflict. Through his longitudinal research with married couples, Gottman (1994) explored both concurrent and future outcomes of observed couple conflict problem-solving and discussion patterns. He proposed that marital conflict or negativity must be considered in relation to positive aspects or exchanges in the relationship. Gottman (1994) suggests that a positive-to-negative ratio in relationship exchanges of 5 (positive exchanges): 1 (negative exchange) exists for stable couples and a ratio of less than 1:1 exists for unstable couples. Therefore, understanding the impact of conflict within the marital subsystem, similar to research with siblings, must be explored within the context of relationship warmth.

Similar to sibling conflict research, marital conflict has been defined across various dimensions including frequency, intensity, content, and resolution patterns (for review, Cummings & Davies, 2002; Zimet & Jacob, 2001). Children's exposure to frequent and intense marital conflict has been linked to negative emotional well-being, including higher levels of depression and anxiety as well as increases in aggressive and defiant behaviors (for review, Cummings & Davies, 2002). The frequency and intensity of marital conflict may also be important in understanding the process by which children model their parents' conflict resolution patterns with their siblings. Zimet and Jacob (2001) note that "it would be expected that as frequency increases, so too does the likelihood of learning and reproducing inappropriate social behaviors." (p. 321). The authors again emphasize the development of negative behaviors. Conflict frequency must also be considered in light of the intensity and manner in which the conflict is resolved. Few researchers examine the potential beneficial effects of parents' effective conflict resolution patterns on children's social development. The manner in which marital conflicts are resolved may be especially important not only for the individual child, but also for the success of conflict resolution strategies in future relationships with siblings and peers.

Constructive and Destructive Conflict Management Patterns in the Marital Relationship

Similar to emerging work with sibling conflict, marital researchers have defined marital communication patterns in terms of constructive and destructive conflict management styles (e.g., Cummings & Davies, 2002; Feeney, Noller, Sheehan, & Peterson, 1999; Sillars, Canary, Tafoya, 2004). Constructive marital conflict patterns include problem-solving, agreement, and negotiation. An additional constructive pattern

includes parents' appropriate and effective explanations of their conflict resolutions to their children (Cummings & Davies, 2002; Howes & Markman, 1989). In contrast, destructive marital conflict includes interparental aggression, nonverbal conflict, withdrawal and disengagement, hostility and threats (Cummings & Davies, 2002).

The strategies employed by couples in negotiating conflict in marital interactions have most often been linked to their relationship satisfaction. In fact, conflict resolution has been cited as a central task of maintaining a satisfying marriage (Kurdek, 1995). Research frequently distinguishes between constructive and destructive conflict resolution patterns by their effect on the marital system. Constructive styles have been linked to marital satisfaction; destructive styles with marital dissatisfaction (Noller & Fitzpatrick, 1990). Observational research has indicated that couples' with less marital satisfaction engage in more destructive patterns, including criticizing, commanding, and complaining behaviors. These couples also tend to use less positive or constructive communication styles, including agreeing, assenting, and approving behaviors, during conflict interactions (for review, Feeney, Noller, Sheehan, & Peterson, 1999). Kurdek (1995), in his longitudinal work with 155 married, middle-class couples, noted that couples' reports of marital satisfaction were related to their conflict resolution patterns, with higher reports of marital satisfaction related to greater spousal ratings of constructive strategies, including agreement, compromise, and use of humor. Alternatively, marital dissatisfaction was related to reports of destructive conflict resolution strategies, including conflict engagement (heated), withdrawal, and defensiveness.

Although not a primary focus of the current study, the literature suggests that the combination of both partners' particular styles of resolving conflicts is especially important to deciphering the long-term effects of conflict resolution patterns on marital happiness. In particular, the demand-withdrawal pattern of conflict resolution has received wide attention in the marital literature. In general, this pattern describes conflict interactions in which one person approaches a partner on an issue and the partner attempts to avoid the discussion of this area (for review, Sillars, Canary, & Tafoya, 2004). The relationship between the demand-withdrawal conflict resolution pattern and marital unhappiness has been documented in other research as well (e.g., Kurdek, 1995). Yet, limited research has explored the potential connection between marital styles of conflict resolution and child outcomes. In particular, few studies have examined parent's conflict resolution styles and their children's use of similar conflict management patterns with their siblings. The following sections will present the literature linking marital conflict and sibling relationship quality, concluding with special attention to emerging research in the field that begins to connect conflict resolution styles within these two relationships.

Marital Conflict and Sibling Relationship Quality

Frequent unresolved and intense marital conflict has been associated with poor sibling relations (e.g., Brody, Stoneman, McCoy, & Forehand, 1992; Erel, Margolin, & John, 1998; Jenkins, 1992; Volling & Belsky, 1992). In particular, research has linked marital conflict with less sibling relationship warmth and increased conflict and rivalry in middle-class families (Stocker & Youngblade, 1999). Similarly, maternal reports of negative marital relationships have been related to older (5-8 yrs.) siblings' negative

interactive behaviors with their younger siblings (1-4 yrs.) during a laboratory free-play interaction task. Brody, Stoneman, McCoy, and Forehand (1992), in their longitudinal study with middle-class, school-age (7-14) siblings and their parents, found that parents' reported marital conflict in the presence of their children predicted increases in sibling conflict one year later. Additionally, the authors noted that higher levels of parent-reported marital quality and lower reported conflict in the child's presence was correlated with lower rates of sibling negative behaviors, including threats, name-calling, and physical aggression, during an observational problem-solving task.

Another line of inquiry linking marital and sibling relationships has examined the indirect influence of marital conflict through effects on parenting quality. The majority of research in this area has noted that as levels of marital conflict become more frequent, parents become more negative and hostile with their children, resulting in higher negativity in the sibling relationship (e.g., Brody, Stoneman, & McCoy, 1994; Erel, Margolin, & John, 1998; Harold & Conger, 1997; Stocker & Youngblade, 1999). The goal of the current project, however, is to focus in on the direct connection between marital and sibling relationships.

Constructive and Destructive Conflict Management: Linking Marital and Sibling Communication

While both marital and sibling conflict management styles have been presented in terms of destructive and constructive patterns, limited research has examined the process by which parents' use of particular conflict strategies in their marital interactions might influence siblings' use of similar conflict resolution styles. A potential link between parent and sibling conflict management styles has been suggested in the literature. For

example, providing support for a Social Learning framework, Sillars, Canary, and Tafoya (2004) suggest that "children learn how to manage conflicts indirectly by watching their parents and modeling their behavioral style" (p.426). Similarly, Harold and Conger (1997), arguing for the potential beneficial effect of positive or constructive marital conflict, note that adolescents may employ their observation of effective parent conflict resolution strategies to develop and manage future conflicts with others.

The limited research that has explored possible similarities between parent and sibling conflict management styles primarily examines more negative or destructive conflict strategies, rather than the potentially more beneficial constructive strategies. It is important to note that examining the relationship between marital and sibling conflict resolution strategies from a perspective of identifying protective or "good" correlates may not directly mirror the path of risk factors. As an example, parent destructive marital conflict (e.g., screaming at one another) may predict increases in siblings' use of similar destructive conflict. The lack of parent destructive conflict (e.g., no screaming), however, does not necessarily predict siblings' use of constructive conflict styles (e.g., sharing). The absence of negative does not equal the presence of positive. Thus, potentially different predictors are implicated in the development of positive outcomes.

Further, to date, the majority of these investigations have relied exclusively on questionnaire self-report data to examine the relationship (Noller, Feeney, Peterson, & Sheehan, 1995; Reese-Weber, 2000). For example, Noller, Feeney, Peterson, & Sheehan (1995), examining consistency or congruence across family members perceptions of destructive conflict resolution patterns, found little connections between college-age students' and their parents' reports of their conflict patterns across sibling, parent-child,

and marital relationships. However, this study employed only questionnaire data and included only reports from one sibling in their sample. Further, an additional study by Reese-Weber (2000) lends support to the potential consistency across family conflict resolution patterns posited by a Social Learning (Bandura, 1969) and Family Systems (Minuchin, 1985) framework. In Reese-Weber's (2000) sample, middle-class adolescents self-reports of their own use of attack and compromise strategies with their siblings and parents were related to their perceptions of their parents' and siblings' use of these strategies across sibling, parent-child, and marital relationships (Reese-Weber, 2000). Results revealed that middle- and late-adolescents ratings of attack conflict resolution strategies within their sibling relationships were positively related to their perceptions of family members' use of attack styles in other dyadic relationships. Similarly, adolescents' reported use of compromise strategies were linked to their evaluations of their siblings' and parents' use of such strategies to resolve conflicts across sibling, parent-child, and marital relationships. While this initial work significantly contributes to developing a greater understanding of the potential consistency across family dyadic relationships, it remains limited by its reliance on only one family members' self-report measure.

Research by McGuire, McHale, and Updegraff (1996) examined parents' ratings of marital happiness with children's reports of their sibling relationships. Specifically, middle-class parents' ratings of high levels of marital satisfaction and love were linked to their elementary school-age child's report of sibling relationships characterized by both high warmth and conflict ("affective-intense"). Building on the work by McGuire, McHale, and Updegraff (1996) using child and parent report, Rinaldi and Howe (2003)

examined associations between the frequency of conflict as well as type of conflict resolution pattern employed within and across different family subsystems with a sample of 60 White, middle-class 5th and 6th grade children, their parents, and their closest-in-age-sibling within a 5-year age range. Each member of the family rated both his or her own level of conflict and conflict resolution style (e.g., constructive or destructive) as well as perceptions of other family members' frequency of conflict and conflict resolution style within sibling, parent-child, and marital relationships.

With regard to the marital relationship, Rinaldi and Howe (2003) found sibling and parent reports of the level of conflict frequency to be consistent. Parents and children also agreed on the amount of destructive conflict styles (e.g., verbal aggression, avoidance) employed by parents during marital interactions. Further, providing support for a potential connection between marital and sibling conflict, fathers' reports of destructive marital conflict were associated with their reports of high levels of conflict within the sibling relationship. Little agreement, however, was found between parents' and children's reports of parents' use of constructive marital conflict strategies (e.g., problem-solving, collaborating). The authors suggested that children may be better able to distinguish incidences of destructive rather than constructive patterns (Rinaldi & Howe, 2003). While children may experience difficulty adequately deciphering and reporting instances of parent constructive conflict, questions regarding the possibility that children may mirror their parents' conflict behaviors in their interactions remain unaddressed.

Rinaldi and Howe's (2003) work provides an important step towards a greater understanding of the development of effective conflict management strategies in children.

Their research examines potential connections between multiple family members' perceptions of conflict strategies within and across different family subsystems. However, the study relied exclusively on questionnaire data to examine these relationships. Observational data on sibling interactions may provide greater insight into potential connections between marital and sibling constructive and destructive interaction patterns. Further, sibling measures included in the Rinaldi and Howe (2003) study assessed only the level of conflict, warmth, and relative status of power. No measure of constructive versus destructive sibling conflict resolution patterns was included. Observational research including sibling interactions may provide a method for directly accounting for sibling constructive and destructive conflict patterns.

The Current Study

The current study addressed potential associations between parents' early and concurrent styles of marital conflict resolution (e.g., constructive, destructive) and their oldest child's use of similar strategies during interactions with his or her sibling. This research extends the literature on conflict resolution in several ways. First, connections between marital conflict and children's well-being have been well-established (e.g., Cummings & Davies, 1994). Yet, relatively few researchers have explored the potential relationship between marital conflict and children's sibling relationships, fewer still have focused on the ways in which parents' handling of marital conflict may actually benefit children. Noting a lack of research attention in this area, Volling (2003) expressed that currently the field does "not have much in the way of evidence to show how positive marital communication and loving emotions benefit children's sibling relationship quality and well-being." (p. 215). Social learning theory (Bandura, 1979) posits that children

may develop and model their behavior in conflict interactions on their observations of their parents' management of marital conflict. Therefore, parents' use of constructive strategies may influence the development of constructive conflict management patterns children employ in interactions with their siblings and future peers. Similarly, Family Systems Theory (Minuchin, 1985) suggests that patterns within one family subsystem likely influence and are influenced by additional family systems, again lending support to a potential model by which parent conflict resolution styles may be related to sibling conflict resolution styles.

The Social Context of Sibling Relationships

Bronfenbrenner and Morris' (1998) ecological perspective provides an important lens to view potential linkages between marital and sibling communication patterns. This perspective challenges researchers to focus on the interrelationships among different aspects of the social environment, including characteristics of the sibling relationship, family structure, employment status, ethnicity, and social class, on the developing child. The family provides the child's first context to develop an understanding of close relationships (Stocker & Youngblade, 1999).

The majority of research focusing on marital and sibling relationships has been conducted with middle-class families. Emphasizing an ecological perspective, Cicerelli (1995) argues that "siblings influence one another's characteristics, cognitive and personal-social behavior, development and aging, and adjustment as they influence and are influenced by the larger family system and external social context of which they are a part." (p. 11). Thus, the focus of the current research on a unique sample of dual-earner, working-class families provides an especially important context to examine marital and

sibling relationships. Research has suggested that dual-earner couples may be at a greater risk for increased stress which could affect marital conflict (Hochschild, 1989). Moreover, siblings in dual-earner families may experience more caregiving responsibilities and may spend greater amounts of time together (Crouter & McHale, 1996). Therefore, identifying conflict resolution strategies employed by children from working-class, dual-earner backgrounds with their siblings is especially important.

Relatively few researchers have examined links between constructive and destructive conflict resolution patterns within marital and sibling relationships. Further, limited research has been conducted with the use of both observational and questionnaire data. Finally, to address a further conceptual gap in the literature, namely; the dependent and interactive nature of both marital and sibling conflict patterns, Hierarchical Linear Modeling (HLM) will be used. HLM is a statistical technique to account for the dependent nature of dyadic data and will constitute an additional strength of the current project.

Research Questions and Hypotheses

The current study addresses the following research questions:

Question 1:

Are mothers' and fathers' reports of their marital conflict resolution strategies across the first year of parenthood (Time 1) and as their oldest child enters the first grade (Time 2) related to sibling conflict resolution strategies during an observed interaction (Time 2)? (Figure 1)

Hypothesis 1:

Social Learning Theory (Bandura, 1969) posits that children develop effective conflict resolution strategies by modeling their parents' behavior during conflict interactions. As such, it is hypothesized that mothers' and fathers' early (Time 1) and concurrent (Time 2) reports of marital conflict resolution strategies will relate to their first-grade child's use of similar strategies during an observed sibling interaction. It was hypothesized that parents' greater Time 1 and Time 2 reported use of constructive strategies (e.g., positive problem solving) would be positively related to higher ratings of constructive conflict management strategies during the sibling interaction. In addition, it was hypothesized that parents' reported level of destructive conflict strategies would predict children's use of destructive sibling interaction patterns.

Question 1A:

Are mothers' and fathers' reports of their marital conflict resolution strategies across the first year of parenthood (Time 1) and as their oldest child enters the first grade (Time 2) related to sibling positive connectedness, negative affect, and total conflict during an observed interaction (Time 2)? (Figure 2)

Hypothesis 1A:

Given that sibling relationship outcomes have been linked to characteristics of their parents' marriage (e.g., Stocker & Youngblade, 1999), it was hypothesized that parents' marital conflict styles would relate to sibling observed positive connectedness, negative affect, and total conflict. More specifically, it was expected that mothers' and fathers' early (Time 1) and concurrent (Time 2) constructive marital conflict would be associated with higher ratings of sibling positive connectedness and lower ratings of sibling negative affect and total conflict. Additionally, it was hypothesized that mothers'

and fathers' destructive conflict styles would relate to lower ratings of sibling positive connectedness and increased levels of sibling negative affect and conflicts.

Question 1B:

Do mothers' and fathers' Time 1 and Time 2 constructive conflict resolution styles moderate the relationship between destructive conflict resolution styles and observed sibling conflict resolution strategies? (Figure 3)

Hypothesis 1B:

This question was largely exploratory. It follows from Brody's "balance hypothesis" of sibling conflict and Gottman's (1994) observation work with married couples that conflict or negativity must be considered in relation to positive aspects or exchanges in the relationship. It was hypothesized that the relationship between parents' destructive conflict styles and sibling observed conflict styles would vary by parents' ratings of constructive conflict styles. I predicted that mothers' and fathers' reports of using high levels of both destructive and constructive conflict resolution styles would be associated with greater use of constructive conflict resolution strategies by siblings than parents who use high levels of destructive strategies with low levels of constructive strategies.

Question 2:

Are mothers' and fathers' Time 1 and Time 2 reports of their marital conflict resolution strategies related to their own reports of the sibling relationship warmth, conflict, and avoidance at Time 2? (Figure 4)

Hypothesis 2:

Building upon work linking overall marital quality to sibling relationship warmth and conflict (e.g., McGuire, McHale, & Updegraff, 1996; Stocker & Youngblade, 1999), it was hypothesized that mothers' and fathers' early and concurrent reports of constructive marital conflict strategies (e.g., problem-solving) would be related to increased reports of warmth in their children's sibling relationships. It was hypothesized that parents' reported use of destructive conflict styles would be related to increased reports of conflict and avoidance in the sibling relationship.

Using a multilevel regression model is superior to conducting regression analyses separately for mothers and fathers because multilevel models can account for the inherent dependencies in couple-level data (Raudenbush, Brennan, & Barnett, 1995). Analyses will thus use a regression framework in multilevel modeling, using mothers' and fathers' reported marital conflict resolution strategies at Time 1 to predict mothers' and fathers' reports of sibling relationship warmth. Regressions will be repeated using sibling conflict and avoidance as outcomes.

Question 2A:

Do mothers' and fathers' Time 1 and Time 2 constructive conflict resolution styles moderate the relationship between destructive conflict resolution styles and parent reports of the sibling relationship? (Figure 5)

Hypothesis 2A:

This question was again exploratory. It was hypothesized that the relationship between parents' destructive conflict styles and reports of the sibling relationship would vary by parents' ratings of constructive conflict styles. I predicted that mothers' and fathers' Time 1 and Time 2 reports of using high levels of both destructive and

constructive conflict resolution styles would be associated with their reports of greater sibling warmth and less sibling conflict than parents who report use of destructive strategies with low levels of constructive strategies.

CHAPTER 3

METHOD

Procedure

Data are drawn from the Work and Family Transitions Project, a longitudinal study of the transition to parenthood in working-class, dual-earner couples (Perry-Jenkins, 1996). The design of the larger study included 153 couples recruited from prenatal education classes in Western Massachusetts and included married or cohabiting heterosexual couples. Eligible couples met the following criteria: (a) both partners were expecting their first child, (b) held full-time jobs (at least 35 hours per week) prior to the birth of their baby (c) planned to return to work full-time within six months of the baby's birth, and (d) were "working-class" (defined by restricting educational level to an Associate's Degree or less). Each member of the couple was separately interviewed in their home across five time points, beginning with a third-trimester of pregnancy interview, a one-month postpartum interview, an interview within one month of the mother's return to work, a six-month postpartum mail interview, and concluding with an interview 12 months after the baby's birth. A six-year follow-up visit was conducted with families as their oldest child entered the first grade.

Participants were selected for the current study when the target, first-grade child had a younger sibling within a 3.5 year age range. When the target child had a younger sibling, parents completed an additional questionnaire assessing the quality of their children's sibling relationship and an unstructured videotaped 10-minute sibling interaction was conducted. At the time of the current project, data collection for the original full sample was not yet completed. The current project included parent

questionnaire data from 50 families from the original sample in which the first-grade child had a younger sibling within a 3.5 year age range. In addition, sibling observational data was completed with 40 of the 50 first-grade children and their next-younger sibling.

The current project draws from data collected during four of the early parent interviews across the transition to parenthood that included parent-report measures of marital conflict styles. Data collected across the transition to parenthood interviews will be referred to as "Time 1" for this study. The current project also includes data collected at the sixth phase of the project. During this 3-hour home visit, parents' provide information in three general domains: 1) family (e.g., childcare plans/arrangements, parenting, quality of sibling relationships), 2) personal (e.g., psychological well-being, marital relationship, conflict resolution styles), and 3) work (e.g., hours, workplace policies and characteristics). Parent questionnaire and sibling observational data gathered at the first-grade time point will be referred to as "Time 2" for the current study.

Sample

Participants for the current project included 50 first-grade children and their families from the original sample of 153 dual-earner, working-class couples. Demographic statistics for the participants are provided in Table 1. Target first-grade children (19 boys, 31 girls) ranged in age from 6.2 to 7.5 years (M = 6.8, SD = .29). Younger siblings were predominantly boys (35 boys, 15 girls) and ranged in age from 3.2 to 6.2 years (M = 4.4, SD = .76). The average age space between the target first-grade child and his or her younger sibling was 2.5 years (range = 1.0 to 3.5 years). All siblings were biologically related. Single-parent families were not included for the current project. The majority of families had two children (81%). Nine families in the sample

had three children and two families had four children. For the families with more than two children, the younger sibling closest in age to the target child participated. The sibling pairs consisted of 22 same-sex pairs (9 older sister-younger sister pairs; 13 older brother-younger brother pairs) and 28 opposite-sex pairs (22 older sister-younger brother pairs; 6 older brother-younger sister pairs). Older sister-younger brother pairs comprised nearly half of the sample (44.0%).

Forty of the fifty families that met criteria for the sibling project (e.g., target child has a younger sibling within a 3.5 year age range) completed a 10-minute videotaped, free-play interaction. Questionnaire data from families who did not complete the sibling interaction were included in self-report component of the current study. There was a trend that younger siblings participating in the videotaped interaction were older than younger siblings included in the full sample of 50 families ($F = 2.869$, $p < .10$). No other trends or significant demographic differences were found between the two samples.

At the time of their oldest child's entry into the first grade, mothers' ages ranged from 26.5 to 47.5 years ($M = 35.7$) and fathers' ages ranged from 27.5 to 47.4 years ($M = 37.5$). Couples were married or cohabiting for an average of 10 .0 years. A high percentage of participants (96% of mothers and 96% of fathers) were White.

Participants reported a range in educational attainment levels at the time of the first-grade interview. The highest degree held by 56% of mothers and 72% of fathers was a high school diploma or GED. Many of the participants (44% of mothers and 28% of fathers) received some additional training past high school. For example, 8.0% of mothers and 6.0% of fathers received vocational degrees (e.g., EMT certification, truck driving). In addition, 32.0% of mothers and 16.0% of fathers had earned a one- or two-

year Associate's Degree. As their oldest child entered the first grade, 4% of mothers and 6% of fathers had earned a bachelor's degree.

At the first-grade interview, mothers reported working an average of 34.6 hours per week, with a range of 6 to 58 hours. Fathers reported working an average of 48.0 hours per week, with a range of 27 to 76 hours. Seven mothers and two fathers were not employed at the time of the first-grade interview. The median family income (husbands' and wives' combined wages) was $59,086: Mothers reported average annual incomes of $23,926 and fathers reported average incomes of $38,580.

Measures

Copies of all study measures are included in the appendices.

Mothers' and Fathers' Conflict Resolution Strategies

Mothers' and fathers' Time 1 and Time 2 conflict resolution styles were assessed with the Conflict Resolution Styles Inventory (CRSI; Kurdek, 1994). Parents indicated how frequently (1 = never, 5 = always) they used each of four styles to manage arguments and disagreements with their spouse across the transition to parenthood and as their oldest child entered the first grade. The four styles include positive problem solving, conflict engagement, withdrawal, and compliance. The positive problem solving subscale provides an estimate of the amount of negotiation and constructive conflict management. Engagement indicates the level of heated conflict that includes tactics such as extending the dispute beyond the original issue and using personal insults. The withdrawal subscale captures the degree of detachment and avoidance during marital discussions. The compliance subscale estimates the amount partners "give in" during arguments without presenting their side of the disagreement. There are four items per

subscale, including questions such as "I negotiate and compromise" (positive problem solving), "I launch personal attacks" (conflict engagement), "I tune the other person out" (withdrawal), and "I do not defend my position" (compliance). The positive problem solving scale was used as a measure of constructive conflict. Conflict engagement, withdrawal, and compliance assessed destructive conflict styles.

Measures of parent conflict resolution were assessed during the third-trimester of pregnancy, mother's return to work (approximately 14 weeks postpartum), 6-month postpartum and 12-month postpartum interviews. Six families were not administered the Conflict Resolution Styles Inventory (CRSI; Kurdek, 1994) at the 12-month interview due to the accidental absence of the questionnaire from the interview. The four conflict resolution strategies (positive problem-solving, engagement, withdrawal, and compliance) were positively correlated across the transition to parenthood phases for mothers, ranging from .26 to .65, and fathers, ranging from .44 to .75.

Mothers' and fathers' scores across the four time points were averaged to create mean Time 1 variables including: Time 1 positive problem solving, Time 1 engagement, Time 1 compliance, and Time 1 withdrawal.

At Time 2, mothers and fathers were also administered the Conflict Resolution Styles Inventory (CSRI; Kurdek, 1994). The following Time 2 conflict resolution variables were created: Time 2 positive problem solving, Time 2 engagement, Time 2 withdrawal, and Time 2 compliance, separately for mothers and fathers.

Cronbach's alphas were conducted to determine the internal consistency of items. Reliability estimates for mothers' and fathers' Time 1 and Time 2 conflict styles

generally ranged from .70 to .80 with one time point dipping to .49 (positive problem-solving at six-month assessment).

Measures of Sibling Relationship and Sibling Conflict Resolution Styles

Mothers' and Fathers' (Time 2) Reports of Sibling Relationships

Mothers and fathers completed the Sibling Relationships in Early Childhood Questionnaire (Volling, 1997) at the first-grade (Time 2) interview. This 18-item measure developed from Schaefer and Edgerton's (1981) Sibling Inventory of Behavior assesses the target child's behavior toward their sibling across three dimensions: Positive Involvement, Conflict and Rivalry, and Avoidance. The 8-item Positive Involvement scale includes items such as the degree to which the target child "shares play things when brother/sister wants to play with him" and "does nice things for younger sibling." Sample items in the 7-item Conflict and Rivalry scale include how often the target child "feels jealous of brother/sister" and "teases or annoys sibling." The 3-item Avoidance scale includes items such as how often the target child "is happy when brother/sister goes away" and "frowns or pouts when sibling has to be with him/her." Mothers and fathers rated all items across a 5-point Likert scale ranging from "never" to "always." The alpha coefficients for positive involvement, conflict and rivalry, and avoidance were .92, .89, and .73 for mothers, and .82, .77, and .59 for fathers.

Videotaped Sibling Observation

An unstructured videotaped free-play observation was conducted with forty sibling pairs consisting of a target child and his or her younger sibling in the family's home. The interaction was designed to present the target child and his or her younger sibling with a novel toy that they had to share. During this 10-minute interaction, the

target child and his or her sibling were instructed to play with a Playskool Potato Head™ Pals Farm Playset while a research assistant completed paperwork in the room. This Farm Playset included various figures and pieces for the children to construct characters with different faces and accessories. The use of this particular novel toy was designed to provide the siblings with opportunities to engage in constructive (e.g., problem-solving, negotiating) and destructive (e.g., grabbing the toy, name-calling) styles of conflict management.

A three-phase coding process was employed to identify the number of sibling conflict episodes, conflict resolution strategies, sibling positive connectedness and negative affect. Training of coders consisted of initial description and instruction of the codes. Research assistants practiced for several weeks coding single-parent sibling interaction tapes not included in the present study. Additional practice tapes were created to familiarize research assistants with codes for conflict resolution strategies. Weekly coding meetings were conducted to ensure reliability. For each of the coding phases, all 10-minute interactions were double-coded by a team of undergraduate and graduate research assistants. Coding discrepancies were managed by re-coding of the interactions by two additional research assistants to be used for analyses. Initial codes were used for all reliability estimates.

Observed Sibling Conflict Episodes

Assessment of sibling conflict episodes was modified from coding system used in previous work (e.g., Howe et al., 2002; McElwain & Volling, 1998; Youngblade & Belsky, 1992). The code captured the degree to which the sibling dyad was in conflict or disagreement with each other. Siblings scoring high on this code were involved in

escalating and intense conflict episodes or multiple conflicts over the course of the 10-minute interaction. Conflict was defined as an exchange containing mutual opposition (Howe, Rinaldi, Jennings, & Petrakos, 2002; Slomkowski & Dunn, 1992). The shortest possible conflict episode consisted of two oppositional turns, one by each sibling partner. Conflict could include both verbal and physical exchanges. Further, aggression was not necessary to define a conflict episode. Following procedures outlined in McElwain and Volling's (1998) conflict coding manual, research assistants coded the presence of conflict between sibling pairs during each 30-second interval of the 10-minute interaction. Coders marked the counter time of the beginning and end of the conflict episode. Initial conflict intensity codes were used to assess the degree to which children engaged in mutual opposition on a 3-point scale ranging from 0 (no conflict) to 2 (extended and/or intense conflict). However, given that few conflict episodes in our sample were rated as high intensity conflict, this scale was collapsed into a 2-point scale for the presence of conflict (0=no conflict, 1=conflict). The number of conflicts observed during each observation was summed to create a Total Conflict score. Additionally, conflict episodes were further analyzed in the second phase of coding to assess conflict resolution strategies and attempts. Cohen's weighted kappa was used to assess inter-observer agreement (Cohen, 1968). Cohen's kappa for sibling conflict episode coding was .78. (See Appendix D)

Observed Sibling Conflict Resolution Strategies and Attempts

The conflict episodes were next coded by the team of research assistants for instances of constructive and destructive conflict management styles based on a coding system developed by Howe (1992). Following procedures outlined by Howe, Rinaldi,

Jennings, and Petrakos (2002), observed sibling conflict episodes were coded for the conflict resolution strategy used to end the conflict. In addition, any attempt, regardless of success, to resolve a conflict by either the target first-grade child or his or her sibling was coded. Constructive strategies included negotiation and appealing to the rules of the task. Negotiation was defined as one child suggesting a compromise, by sharing, taking turns, or trading objects. Appeal to the rules occurred when one child used the instruction of the task to end the conflict (e.g., "We can make the pieces any way we want."). Destructive strategies included adversarial resolutions to disagreements during which there was a clear winner or loser, because one child stands firm and insists on his or her way and the other child surrenders. This Standing Firm/Surrendering code was further classified by which child (e.g., first-grade child or younger sibling) insisted on having his or her way and which child surrendered. Three additional conflict resolution codes were included which were classified as passive conflict strategies. These conflict avoidant strategies, which were not necessarily purely constructive or destructive, included Disengagement/Ignoring, Distraction, and Third-Party Intervention. Disengagement occurred when one or both sibling partners ignored the other or moved onto something new. Distraction strategies included one partner giving the other something unrelated to the item sought or changing the subject. Third-Party Intervention strategies involved conflicts that ended when an adult intervened or was asked to intervene to end the conflict. A final Indeterminate code was used when coders were unable to classify the conflict resolution code. All videotaped interactions were double-coded by the team of graduate and undergraduate research assistants. Cohen's kappa for sibling conflict resolution coding was .80. (See Appendix E)

Observed Sibling Positive Connectedness and Negative Affect

The unstructured interactions were also coded for the level of Positive Connectedness and Negative Affect observed following procedures developed by McElwain and Volling (1998) and Howe (1992). Research assistants coded the dyadic quality of the sibling relationship across two dimensions: positive connectedness and negative affect. Coders rated the observed positive connectedness and negative affect every 30 seconds, using a 5-point rating scale ranging from 1 (no connectedness) to 5 (high, intense connectedness). The positive connectedness variable provided a joint estimate of the warmth in the sibling relationship, including observations of joint pleasure, giggling, and laughter. A measure of negative affect, estimating the degree of conflict/negativity in the relationship, included observations of behaviors such as joint conflicts, disagreements, and anger. Mean rating scores for positive connectedness and negative affect were calculated within free-play interactions by summing ratings for each dyadic measure across 30-second intervals and dividing the number by the number of intervals coded. In order to assess coding reliability, intraclass correlations were computed. The intraclass correlations coefficients .95 for positive connectedness ratings and .93 for negative affect ratings.

(See Appendices E and F)

CHAPTER 4

RESULTS

Descriptive Analyses: Independent and Dependent Variables

Before addressing the major research questions, descriptive statistics on the independent and dependent variables were examined. Descriptive statistics on mothers' and fathers' Time 1 and Time 2 conflict resolution strategies as well as mothers' and fathers' Time 2 ratings of the sibling relationship are presented in Table 2. Intercorrelations among the predictor variables are presented in Table 3 and descriptive analyses of the sibling observational outcomes are presented in Table 4.

Parent Time 1 and Time 2 Conflict Resolution Styles

As presented in Table 2, both mothers and fathers reported higher mean levels of constructive (e.g., positive problem-solving) than destructive (e.g., engagement, withdrawal, compliance) conflict resolution strategies at Times 1 and 2. Significant differences were evident in mothers' and fathers' conflict styles in paired t-test analyses at both time points. On average, new mothers reported using significantly more engagement (M = 2.25, range = 1.25 to 3.69) than fathers (M = 1.86, range = 1.00 to 3.25), and, at Time 2, this significance remained at the level of a trend ($t(48) = 1.85$, $p < .10$). Additionally, while not significantly different at Time 1, at Time 2, mothers reported significantly more use of withdrawal to resolve a conflict than fathers ($t(48) = 2.05$, $p < .05$). No overall mean differences between mothers' and fathers' reported use of positive problem-solving or compliance were found at Time 1 or Time 2.

Table 3 presents the correlational analyses conducted among the four subscales of the Conflict Resolution Styles Inventory (CSRI; Kurdek, 1994) separately for mothers

and fathers at Time 1 and Time 2. For the most part, correlations are in the expected directions with constructive styles (e.g., positive problem solving) negatively related to destructive styles (e.g., (heated) engagement, withdrawal, and compliance). Of note, however, compliance strategies, which included items such as "Not being willing to stick up for myself" and "Giving in with little attempt to present my side of the issue," were not consistently related to other styles for mothers or fathers. At Time 1, compliance was negatively related to positive problem solving (Mothers: $r = -.24$, $p < .10$, Fathers: $r = -.51$, $p < .001$) and positively related to withdrawal strategies (Mothers: $r = .32$, $p < .05$, Fathers: $r = .41$, $p < .01$), and unrelated to engagement. Similar findings emerged for relationships between mothers' reports of Time 2 compliance and positive problem solving ($r = -.30$, $p < .05$) and withdrawal ($r = .38$, $p < .01$). Again, mothers' Time 2 compliance was not significantly correlated with Time 2 engagement. At Time 2, fathers' use of compliance strategies were not significantly correlated with the other three conflict styles.

Parent Report of Sibling Relationship (Time 2)

On average, mothers and fathers indicated a relatively high degree of positive involvement between the target first-grade child and his or her next younger sibling (Mothers: $M = 29.90$, range = 13.00 to 40.00; Fathers: $M = 30.51$, range = 21.00 to 38.00). Overall, parents also reported a relatively high amount of conflict and rivalry between the siblings. However, on average, mothers reported significantly more sibling conflict and rivalry ($M = 20.61$, range = 10.00 to 35.00) than did fathers ($M = 3.65$, range = 13.00 to 27.00), $t(48) = 2.15$, $p < .05$. Both mothers and fathers reported a relatively low mean level of avoidance between their first-grade child and his or her next younger

sibling (Mothers: $M = 6.41$, range = 3.00 to 15.00; Fathers: $M = 6.10$, range = 3.00 to 9.00). No overall mean differences were found between mothers and fathers reports of their first-grade child's positive involvement or avoidance with his or her next-younger sibling. Correlation analyses indicated that parents' reports of the sibling relationship were unrelated to siblings' age; and an ANOVA revealed no differences by sibling gender as well.

Sibling Observational Measures

Descriptive and frequency analyses of the major sibling observational outcomes are presented in Table 4. Forty sibling pairs completed the observation task. During the 10-minute free-play observation, sibling pairs displayed an average of 2.20 conflict episodes ($M = 2.20$, range 0 to 5, $SD = .21$). In total, 88 conflict episodes were observed across the 40 sibling dyads. Five of the 40 sibling pairs did not engage in a conflict episode during the interaction. One older-sister, younger-brother sibling pair displayed five conflicts, the highest number of conflict episodes observed. Preliminary analyses did not reveal any significant differences in number of observed conflicts by sibling or parent demographic variables.

Each conflict episode was coded by type of conflict resolution strategy displayed by the 35 sibling pairs who engaged in conflict (14 older sister-younger brother dyads, 6 older sister-younger sister dyads, 5 older brother-younger sister dyads, 10 older brother-younger brother dyads). Frequency descriptives of the conflict resolution strategies are also provided in Table 4. Example scripts for conflict resolution strategies and attempts are provided in Table 5.

The majority (68.2%) of conflicts were resolved through destructive conflict strategies. Conflict resolutions described as destructive included conflicts during which one sibling "stood firm" and the other sibling "surrendered." The 60 stand-firm/surrender conflict resolution strategies observed were next divided by *which* sibling, (e.g., either the target first-grade child or his or her younger sibling). "stood firm" and *which* sibling "surrendered." In total, 33 conflicts (37.5%) were resolved by the younger sibling "standing firm" and older sibling "surrendering;" 27 conflicts (30.7%) were resolved by older sibling "standing firm" and younger sibling "surrendering." Although not the primary focus of the current project, potential differences in conflict resolution by sibling age and gender were explored. ANOVA results revealed that when the dyad included an older brother, the gender of the younger sibling was important. Specifically, a trend indicated that older brothers with younger sisters were more likely to "stand firm" during conflicts than gender pairings containing older and younger brothers as well as older sister pairings (F (1, 34) = 2.369, $p < .10$). Additionally, a trend indicated that younger siblings (both male and female) were more likely to "stand firm" or insist on his or her way with an older sister (F (1, 34) = 3.020, $p < .10$). No differences in which sibling "stood firm" were found by either siblings' ages or sibling age difference.

Negotiation strategies were displayed rarely by the sibling pairs. Of the 88 total conflicts observed, only 3 (3.4%) were resolved through the use of negotiation strategies, including sharing and compromise. All 3 instances of negotiation were displayed by older sister-younger brothers.

Strategies coded as "Appeal to the Rules" occurred when one child uses the instructions of the task provided by the research assistant to resolve the conflict. Siblings

appealed to the rules of the task rarely. Only 3 instances (3.4%) of Appeal to the Rules were observed. All 3 of conflicts ended by appealing to rules of the task were employed by older brother-younger brother sibling pairs.

Conflicts resolved when one or both sibling partners ignored each other or moved onto something new were coded as Disengagement. Disengagement strategies were displayed during 16, or 18.2% of the 88 total observed conflicts. Chi-square analyses did not reveal any significant differences by gender pairings of the sibling dyad.

Conflicts resolved when one sibling partner offered the other sibling an item unrelated to the piece sought or changed the subject were coded as Distraction. Distraction resolution strategies were observed rarely, coded for only 3 of the 88 conflicts. One instance of distraction was displayed by an older brother-younger sister sibling pair; two by older brother-younger brother sibling pairs.

Conflicts ended by involving an adult were coded as third-party intervention. Only 2 of the 88 observed conflicts were ended by asking the research assistant to intervene. Both instances of third-party intervention occurred during conflicts by older sisters with younger brothers.

Conflicts were coded as Indeterminate when a resolution was unable to be classified. This code was used for only one conflict, during which an older brother-younger brother sibling pair ran off camera and it was not possible to determine how the conflict ended.

Due to the low frequency of constructive conflict resolution strategies used during observed conflicts, any attempt to resolve a conflict, regardless of success, was also coded. In coding attempts, it was hypothesized that as children begin to learn conflict

resolution strategies, they may practice different conflict styles to resolve conflicts; however, they may not always be successful. Attempts to negotiate and distract the other sibling partner during an observed conflict were coded. As presented in Table 4, only 9 attempts to resolve a conflict were observed, 3 through attempts at distraction and 6 by negotiation.

In sum, of the eighty-eight conflict episodes observed, only three conflicts were resolved through negotiation. These three negotiation conflict resolutions were employed by older sister-younger brother gender pairs. Appeal to the rules of the interaction (e.g., using instructions that were provided for the task such as "We can make the Potatohead any way we want to.") were used to resolve three conflicts. The three observed Appeal to the Rules conflict resolution strategies were employed by older brother-younger brother pairs. The majority of observed conflicts were resolved through adversarial strategies (n=60).

The 10-minute sibling observation tasks were separately coded for positive connectedness and negative affect. Mean ratings were computed by averaging the 30-second interval codes, ranging from 1 (no connectedness) to 5 (high, intense connectedness), across the 20 intervals. Descriptives for the positive connectedness and negative affect sibling dyadic codes are provided in Table 4. On average, siblings were rather neutral, displaying low levels of positive connectedness and negative affect (Positive Connectedness: $M = 1.48$, range = 1.00 to 2.50; Negative Affect: $M = 1.22$, range 1.00 to 1.93). Due to the positive skewness of the affect coding scores, log transformations to the tenth power were conducted for both positive connectedness and negative affect and used in subsequent analyses. Paired T-tests revealed that sibling pairs

were rated as displaying more positive connectedness than negative affect during the interaction (t (39) = -4.11, $p < .001$).

Correlations were conducted to assess potential differences in positive and negative affect by sibling age. Sibling pairs that included a relatively older younger sibling tended to display more positivity during the interaction ($r = .379$, $p < .05$). In addition, siblings with a wider age gap tended to display less positive connectedness (e.g., joint laughter, giggling) than siblings who were closer in age ($r = -.334$, $p < .05$). No significant relationships were found between siblings' age and observed negative affect. Further, Analyses of Variance (ANOVA) did not reveal any significant relationships between sibling gender pairings and shared positive connectedness and negative affect.

Parent Demographic Variables and Sibling Conflict

Several family demographic characteristics were examined as potential control variables for subsequent analyses and are presented in Table 6. A trend indicated that parents with longer marriages tended to have siblings who displayed less positive connectedness during the interaction ($r = -.296$, $p < .10$). For mothers, those married more years also tended to report less sibling conflict ($r = -.250$, $p < .10$). More years married was associated with father's reporting less sibling avoidance ($r = -.344$, $p < .05$). Fathers' age was significantly related to his reports of sibling positive involvement ($r = .393$, $p < .01$), conflict and rivalry ($r = -.307$, $p < .05$), and avoidance ($r = -.292$, $p < .05$). Older fathers were more likely to report more sibling involvement and less sibling conflict and avoidance. Turning to observational data, older fathers as compared to younger fathers were more likely to have siblings who used more constructive conflict

resolution strategies ($F(1, 333) = 3.602$, $p < .10$; M=36.482, SE=1.125 versus. M=39.459, SE=1.093). Additional family demographic variables, including work hours and mothers' age, were not related to sibling questionnaire and observational data. Correlation analyses also did not reveal any differences in parents' reports of the sibling relationship by siblings' age. Additional ANOVA analyses did not yield differences by sibling gender. In cases where years married or fathers' age was related to the outcome, they were controlled for in the analyses.

Question 1 Analyses

The first empirical question examined the relationship between mothers' and fathers' Time 1 and Time 2 reports of their marital conflict resolution strategies and conflict resolution strategies displayed by their children during the sibling interaction task. Given the low frequency of negotiation strategies observed during the sibling interaction, the originally proposed linear regression analyses could not be conducted. Nina Howe, Ph.D., (personal communication, 2007), who developed the coding schemes for sibling conflict resolution strategies, suggested that at the preschool age, resolving a conflict through any style other than adversarial (win-loss) may represent a constructive resolution attempt. As such, even a conflict resolved through passive conflict resolutions (e.g., disengagement, distraction, third-party intervention) may be more constructive than using only adversarial strategies (e.g., grabbing the piece). Based on Dr. Howe's suggestions, a new dichotomous (0, 1) variable was created to re-classify the 35 sibling pairs that engaged in conflict during the interaction by their use of conflict strategies. Sibling pairs were coded as (0) if they used *only* destructive strategies (e.g., standing firm and surrendering) during the interaction. These sibling pairs will be referred to as the

destructive conflict group. Siblings who engaged in at least one conflict in which they used constructive or passive conflict strategies during the interaction were coded as (1). These sibling pairs will be referred to as the *constructive conflict group*. Of the 35 sibling pairs who engaged in conflict during the interaction, the final breakdown of sibling conflict resolution strategies was composed of 17 sibling pairs in the destructive strategies group and 18 sibling pairs in the constructive strategies group. Of these 18 sibling pairs in the constructive strategies group, 3 used only constructive or passive strategies during the interaction (no destructive strategies were used) and 15 used an array of strategies in addition to resolving conflicts through destructive means.

Due to the dichotomous nature of the new dependent variable, binomial logistic regression analyses were conducted. Table 7 presents the binomial logistic regression analyses for Mothers' Time 1 and Time 2 conflict styles predicting the odds of siblings' classification by conflict strategies. The results of fathers' binomial logistic regression analyses are presented in Tables 8 and 9.

Given correlations among parent conflict styles as well as the small sample size, binomial logistic regression analyses were performed first with each parent conflict style alone and then with all four predictors in the same model to examine any potential differences between the analyses. No differences were found and results from analyses with all four predictors in the same model are presented in Tables 7 and 8. As indicated in Table 7, mothers' Time 1 and Time 2 conflict resolution styles, controlling for parents' years married, did not predict the likelihood of siblings being classified as 1, using constructive strategies, or 0, using destructive strategies. However, as presented in Table 8, a trend indicated that fathers' age was related to an increase in the odds of siblings

being classified as using more constructive strategies during the interaction (*exp*(B) = 1.211, $p < .10$). Sibling pairs with older fathers had a 1.211 increase in the odds of being classified as using constructive conflict styles. Fathers' use of compliance both at Time 1 and Time 2 was related to siblings' likelihood of being classified in the constructive conflict strategies group controlling for father's age. A trend indicated that for every unit increase in fathers' use of compliance at Time 1, siblings had a .110 decrease in the odds of using more constructive strategies (*exp*(B) = .110, $p < .10$). At Time 2, Fathers' greater use of compliance strategies was related to a .175 reduction in the odds of their children being classified in the constructive group (*exp*(B) = .175, $p < .05$).

In sum, significant relationships were not found between mothers' conflict resolution strategies, at Time 1 or Time 2, with the likelihood of their children being classified in either the destructive (0) or constructive conflict group (1). For fathers, Time 1 and Time 2 use of compliance strategies were related to a reduced likelihood of their siblings being classified within the constructive strategies group. As indicated in Table 9, when both Time 1 and Time 2 father compliance were included in the model, fathers' compliance at Time 2 remains related to sibling conflict resolution patterns at the level of a trend (*exp*(B) = .257, $p < .10$) and Time 1 compliance became nonsignificant. Again, fathers' Time 2 compliance was related to a .257 decrease in the odds of siblings being classified within the constructive strategies group.

Question 1A Analyses

Question 1A examined the relationship between mothers' and fathers' Time 1 and Time 2 reports of their marital conflict resolution strategies and sibling positive connectedness, negative affect, and total conflict during an observed interaction.

Initial correlational analyses were conducted to explore relationships between both mothers' and fathers' conflict resolution styles and observed sibling positive connectedness, negative affect, and total observed conflict. Results of these correlational analyses are presented in Table 10. Mothers' Time 1 and Time 2 conflict styles were not related to observed sibling positive connectedness or negative affect. Turning to reports of total sibling conflict episodes, mothers' who reported a tendency to withdraw from conflicts with their partner at Time 1 had children's who presented less conflict during the sibling observation ($r = -.318$, $p < .05$).

For fathers, Time 1 and Time 2 conflict resolution strategies were not related to observed sibling positive connectedness. A trend indicated that fathers who reported greater Time 2 use of compliance strategies had children who were rated as less negative during the sibling interaction ($r = -.277$, $p < .10$). With regard to sibling conflict episodes, a trend indicated that fathers who reported greater use of compliance strategies at Time 1 had children who presented less conflicts ($r = -.268$, $p < .10$). This negative relationship between fathers' compliance use and observed sibling conflict episodes was significant at Time 2 ($r = -.415$, $p < .01$).

Following these initial correlations, linear regression analyses were conducted separately at Time 1 and Time 2 with mothers' and fathers' resolution styles predicting observed sibling positive connectedness, negative affect, and total conflict. The results of hierarchical linear regression analyses for fathers' Time 1 conflict styles predicting

sibling positive connectedness are presented in Table 11. Table 12 presents the linear regression results for mothers' and fathers' Time 1 and Time 2 conflict styles on total observed sibling conflict.

As indicated in Table 11, a trend indicated that fathers' greater use of withdrawal strategies at Time 1 predicted sibling positive connectedness (b = .064, SE = .036, t = 1.786, p = .10). Fathers' Time 2 conflict styles were not significantly related sibling positive connectedness. In addition, fathers Time 1 and Time 2 conflict styles did not significantly predict observed sibling negative affect. Turning to sibling conflict episodes in Table 12, fathers use of compliance both at Time 1 and Time 2 significantly predicted less observed sibling conflict at Time 2 (Time 1 compliance: b = -.932, SE = .426, t = -2.189, $p < .05$; Time 2 compliance: b = -.764, SE = .276, t = -2.769, $p < .01$). When both Time 1 and Time 2 father reports of compliance were entered into a hierarchical regression model, a trend for a significant relationship was present only for fathers' Time 2 measures of compliance and sibling conflict episodes (b = -.601, SE = .311, t = -1.929, $p < .10$).

Mothers' Time 1 and Time 2 conflict styles did not significantly predict observed sibling positive connectedness or negative affect. As presented in Table 12, a trend indicated that a one unit increase in mothers' Time 1 reported positive problem-solving predicted a decrease in observed Time 2 sibling conflict (b = -1.060, SE = .618, t = -1.717, p = .10). At Time 2, the relationship between mothers' reports of problem-solving and observed sibling conflict reached significance, with greater positive problem-solving predicting less observed sibling conflict (b = -1.490, SE = .700, t = -2.128, $p < .05$). In addition, mothers' Time 1 use of withdrawal strategies predicted less observed sibling

conflict at Time 2 (b = -1.037, SE = .390, t = -2.659, $p < .05$). The relationship between mothers' use of withdrawal strategies and observed sibling conflict was not significant at Time 2.

Question 1B Analyses

The next question explored whether mothers' and fathers' Time 1 and Time 2 use of constructive conflict styles would moderate the relationship between destructive conflict and observed sibling resolution strategies. To address this question, separate binomial logistic regression analyses were conducted with centered main effect independent variables (e.g., centered Time 1 positive problem solving and centered Time 1 compliance) and an interaction term (e.g., centered Time 1 positive problem solving x centered Time 1 compliance) as predictors. Each model included one of the three main effect destructive conflict styles (e.g., engagement, withdrawal, and compliance), positive problem-solving, and the interaction term. The binomial logistic model test of moderation was repeated for all three destructive conflict styles for mothers and fathers at Time 1 and Time 2. The interaction term was designed to provide a sense of whether constructive conflict would moderate the effects of destructive conflict on sibling observed conflict styles. In total, 12 binomial logistic regression models were tested. Results of the binomial logistic analyses did not reveal any significant moderating effects of parents' use of constructive conflict styles on the relationship between parents' destructive conflict styles and siblings' membership in constructive or destructive groups.

Separate linear regression analyses were next conducted with the centered main effect independent variables (e.g., centered Time 1 positive problem-solving and centered Time 1 engagement) and the interaction term (e.g., centered Time 1 positive problem-

solving x centered Time 1 engagement) as predictors of observed sibling affect. Results of the linear regression analyses also did not yield any significant moderating relationships on sibling positive connectedness, negative affect, or total conflict.

Question 2 Analyses

The second empirical question addressed how mothers' and fathers' Time 1 and Time 2 reports of marital conflict styles were related to their own reports of sibling relationship warmth, conflict, and avoidance. Correlational and Hierarchical Linear Modeling (HLM) analyses of the main effects will first be presented. Of particular interest, however, are significant moderating relationships that emerged in subsequent analyses. Findings from these tests of moderation will be addressed in Question 2A.

Correlations among mothers' and fathers' reports of conflict resolution styles and their reports of their children's sibling relationship are presented in Table 13. Mothers' Time 2 problem-solving was negatively related to their reports of their oldest child's sibling conflict (r = -.426, p < .01) and a trend for less avoidance (r = -.246, p < .10). Additionally, mothers' greater reported use of engagement ("attack") styles at Time 2 was related to more sibling conflict (r =-446, p < .01) and a trend for more avoidance (r =.255, p <.10).

Fathers who reported using more engagement at Time 1 rated their oldest child as engaging in more sibling conflict (r =.361, p < .05), and trends for less positive involvement (r =-244, p <.10), and more avoidance (r =.254, p <.10). A trend indicated that fathers' greater reported use of withdrawal styles at Time 1 was related to less sibling positive involvement (r =-242, p < .10). An additional trend indicated that fathers' greater reported compliance was related to less sibling avoidance (r =-.288, p <.10).

Hierarchical Linear Modeling (HLM, Raunderbush & Byrk, 1992) was used to examine the relationship between mothers' and fathers' Time 1 and Time 2 conflict resolution strategies and their own reports of their child's sibling relationship positive involvement, conflict and rivalry, and avoidance at Time 2. HLM is considered superior to ordinary least-squares regression because it allows for nesting of data from individual respondents within couples, and accounts for the shared dependency in their data. For the Time 1 and Time 2 analyses, a Level-1 dataset and a Level-2 dataset were created in SPSS Version 14 and later input into HLM version 6.0. The Level-1 dataset contained mother and father (each dummy-coded, 0, 1) with each outcome of interest (sibling positive involvement, conflict and rivalry, and avoidance) and the measurement error for each outcome. The Level-2 dataset contained the primary independent variables of marital conflict resolution strategies (e.g., Positive Problem-Solving, Engagement, Withdrawal and Compliance), demographic control variables (e.g., fathers' age, years married), and centered interaction terms.

A separate model was constructed for each outcome of interest – sibling positive involvement, conflict and rivalry, and avoidance. For example, to predict mothers' and fathers' reports of sibling positive involvement, the process of fitting models began with entering two parameters into the Level 1 equation: Mother and Father, with a resulting equation of $Y = \beta_1*(Mother) + \beta_2*(Father) + e$, where Y represents the estimated true sibling positive involvement score.

In Step 2, participants' reported Time 1 and Time 2 conflict resolution styles were entered into the mothers' and fathers' Level 2 equations to predict the mothers' and fathers' intercepts (average level of the outcome (e.g., sibling positive involvement) after

accounting for measurement error) and to determine the amount of variance in the outcome remaining unexplained. Given correlations among the Time 1 and Time 2 parent conflict resolution styles as well as the small sample size, Time 1 and Time 2 predictors were entered into separate models. Fathers' age was controlled for in father analyses and years married was controlled for in mother analyses.

In the next step, mothers' and fathers' Time 1 and Time 2 conflict resolution style scores were entered in order to test the effects of parent conflict style on parents' ratings of the sibling relationship. Sample Level 2 equations were:

$$\beta_1 = \gamma_{10} + \gamma_{11}(\textit{Years married}) + \gamma_{12}(\textit{Mothers' Time 1 Problem-Solving}) + \mu_1$$

$$\beta_2 = \gamma_{20} + \gamma_{21}(\textit{FatherAge}) + \gamma_{22}(\textit{Fathers' Time 1 Problem-Solving}) + \mu_2$$

where β_1 represents the mothers' reported Time 2 sibling positive involvement and β_2 represents the fathers' reported Time 2 sibling positive involvement.

These steps were repeated, substituting parents' Time 1 styles of conflict resolution, with separate analyses for Time 2 parent reports of sibling positive involvement, conflict and rivalry, and avoidance as outcomes. The analytic strategy was the same for Question 2B, with the exception that interaction terms were added to the model to explore the potential moderating effect of parent constructive conflict on destructive conflicts' relationship with sibling outcomes.

Results of HLM analyses for mothers' Time 1 and Time 2 reports of conflict resolution styles predicting their reports of their children's sibling relationship are presented in Table 14. Contrary to predictions, mothers' Time 1 and Time 2 conflict resolution styles did not predict mothers' reports of sibling positive involvement.

Turning to sibling conflict and rivalry, a trend indicated that more years married was related to less sibling conflict (β coefficient = -.237, *SE*=.119, $p < .05$). A trend indicated that mothers' reports of problem-solving at Time 1 was related to less reported sibling conflict (Time 1, β coefficient = -2.190, *SE* = 1.173, $p < .10$). At Time 2, mothers' greater use of positive problem-solving significantly predicted less sibling conflict (Time 2, β coefficient = -2.675, *SE* = 1.042, $p = .05$). Mothers' Time 2 engagement (attack) styles predicted higher ratings of sibling conflict (β coefficient = 2.258, *SE* = .857, $p < .05$). As reflected in Table 13, mothers' Time 1 and Time 2 reports of conflict resolution styles were not related to sibling avoidance.

As presented in Table 15, older fathers rated their oldest child as interacting more positively with his or her younger sibling (β coefficient = .249, *SE* = .101, $p < .05$). Similar to mothers, fathers' Time 1 engagement styles predicted more sibling conflict (β coefficient = 1.533, *SE* = .732, $p < .05$). However, fathers' Time 2 conflict resolution styles did not significantly predict sibling conflict and rivalry. While not significant, a trend was found for fathers' higher reported use of engagement (attack) styles at Time 2 predicting their reports of higher sibling avoidance by their oldest child (β coefficient = .449, *SE* = .252, $p < .10$).

Question 2A Analyses

Question 2A was largely exploratory and asked whether mothers' and fathers' Time 1 and Time 2 reported use of positive problem solving (e.g., constructive strategies) would moderate the relationship between destructive marital conflict and parents' reports of Time 2 sibling relationship measures. To explore this question, the same HLM

analytic strategy was followed, with the exception that interaction terms (e.g., Time 1 engagement * Time 1 positive problem-solving) were added to the model.

Although parents' individual conflict resolution styles were not related to reported sibling positive involvement at Time 1 or Time 2, interesting findings emerged when tests of moderation were conducted. Consistent with hypotheses, positive problem-solving moderated the effect of one destructive strategy (e.g. compliance) on sibling positive involvement, controlling for parents' years married. As illustrated in Figure 6, mothers' greater use of compliance at Time 1 was associated with more sibling positive involvement when mothers also reported using more Time 1 positive problem-solving (β coefficient = 4.929, *SE* = 1.643, $p < .01$).

At Time 2, mothers' who reported higher rates of compliance coupled with more problem-solving rated their oldest child as engaging in less sibling conflict (β coefficient = -2.175, *SE* = .872, $p < .05$). As presented in Figure 7, the highest sibling conflict occurred when mothers reported high use of compliance with low levels of problem-solving. At Time 1, a trend indicated a similar relationship that mothers' Time 1 compliance coupled with low levels of problem-solving was associated with more sibling conflict (β coefficient = -2.842, *SE* = 1.596, $p < .10$).

As presented in Figure 8, mothers' Time 2 withdrawal strategies when coupled with more problem-solving strategies predicted less sibling conflict (β coefficient = -2.175, *SE* = .872, $p < .05$). A trend indicated that mothers' greater use of engagement at Time 1 was associated with less sibling conflict where mothers also reported using more Time 1 positive problem solving (β coefficient = -1.141, *SE* = .623, $p < .10$). The

findings suggest that, at least for mothers, use of destructive conflict styles in the context of also using constructive styles predicts less reported sibling conflict and rivalry.

Mothers' reports of withdrawal at Time 1 combined with high levels of problem-solving strategies predicted greater sibling avoidance (β coefficient = 1.482, *SE* = .714, $p < .05$). As illustrated by Figure 9, mothers' who reported less withdrawal at Time 1 coupled with high problem-solving rated the lowest sibling avoidance. A trend indicated that in combination with less problem-solving, lower rates of engagement at Time 1 predicted more sibling avoidance (β coefficient = 1.808, *SE* = .971, $p < .10$).

A trend indicated that fathers' greater use of compliance at Time 2 when coupled with high positive problem solving was related to more sibling positive involvement (β coefficient = 1.982, *SE* = 1.009, $p < .10$). The lowest levels of sibling positive involvement was associated with fathers with high compliance and low problem-solving at Time 2. Additional interaction effects were not found for fathers' conflict styles predicting sibling positive involvement.

Interaction effects were not found for fathers' conflict styles and reported sibling conflict and rivalry. For fathers, higher rates of engagement at Time 1 coupled with high problem solving were associated with greater sibling avoidance (β coefficient = -.893, *SE* = .435, $p < .05$). The interaction between fathers' Time 2 engagement and problem-solving was not significantly related to father-rated Time 2 sibling avoidance. Additional interaction effects for fathers' conflict styles predicting sibling avoidance were not found.

CHAPTER 5

DISCUSSION

The goal of the present study was to explore how mothers' and fathers' marital conflict resolution styles are related to their children's use of similar conflict strategies with their siblings. Mothers' and fathers' reports of constructive and destructive marital conflict styles across the transition to parenthood and as their oldest child entered the first grade were examined as predictors of their children's sibling conflict styles and sibling relationships. The project addressed two major questions, namely, how would parents' Time 1 and Time 2 conflict resolution strategies relate to their children's conflict behaviors during an observed interaction and how would parents' conflict resolution strategies relate to their own assessment of their children's sibling relationships.

The current project extends the literature on sibling relationships, and family conflict resolution styles, in several ways. Marital qualities, marital conflict in particular, have often been studied as predictors of child functioning. However, research is only beginning to understand how marital conflict may affect children's sibling relationships. Brody, Stoneman, McCoy, and Forehand (1992), in their longitudinal work with middle-class families, found that parents' reports of high marital conflict predicted increased observed sibling conflict one year later. The current study extends such literature linking marital and sibling conflict by beginning to tease apart whether "how" parents manage a conflict, whether by destructive or constructive means, is related to sibling conflict behaviors. For example, hostility during marital disagreements may influence the development of children's conflict behaviors differently than more passive marital conflict styles. Rinaldi and Howe's (2003) pioneering work connecting patterns

of conflict resolution styles across marital, parent-child, and sibling relationships found consistent reports of conflict frequency and destructive conflict. However, the project relied exclusively on questionnaire data. The current study built on work by Rinaldi and Howe (2003) connecting family patterns of conflict resolution by including both observational data and parent reports of first-grade children's sibling relationships. Further, the study employed both early (transition to parenthood) and current reports of parents' conflict resolution styles as predictors of sibling conflict patterns and relationship quality. The inclusion of fathers added a unique and compelling component to the current study. Additionally, the current project examined connections between marital and sibling relationships within a unique sample of dual-earner, working-class families.

Sibling Observational Data - Descriptive Findings

Descriptive findings revealed Interesting trends pertaining to sibling gender pairings, specifically in terms of which child *stood firm* and which child *surrendered* during destructive conflicts. The majority (68%) of conflicts in the present study ended with destructive, win-loss, resolutions. Within these destructive resolutions, the gender of the older sibling was important. Compared to older brothers, trends indicated that older sisters were more likely to *surrender* during disagreements when challenged by their younger siblings. For older brothers, the gender of the younger sibling was key. Older brothers with younger sisters were more likely to *stand firm* in adversarial resolutions than other gender pairings. These results are consistent with research highlighting potential gender differences in conflict styles for brothers and sisters. For example, Howe, Rinaldi, Jennings, and Petrakos' (2002) research with middle-class

kindergarten children and their siblings revealed that younger brothers were more likely to employ destructive strategies with an older sister than with an older brother. Further, Dunn and Herrera (1997) found that preschool girls were more likely than boys to be submissive in conflict resolutions.

Gender differences in sibling adversarial conflicts raise important questions for children's gender role development and socialization. Trends that older brothers were more likely to *stand firm* with younger sisters and older sisters were more likely to *surrender* highlight gender stereotypes of boys as "assertive" and girls as "passive" (Martin & Ruble, 2004). Parents' gender role identity and gender attitudes (e.g., traditionalism) likely influence children's gender socialization as well. In fact, longitudinal research by McHale, Updegraff, Helms-Erikson, and Crouter (2001) with dual-earner, working-class families found that older sibling behaviors and interests were predicted by the gender beliefs of his or her parent of the same sex. Future research should address the role of parents' traditional (versus egalitarian) beliefs and sex-typed attitudes as an influence on children's sibling conflict resolution styles. Perhaps older daughters of mothers and fathers with more traditional beliefs are more likely to submit in conflict resolutions than daughters of mothers and fathers with more egalitarian views.

Sibling Observational Data – Constructive Conflict

A goal of the present study was to examine sibling conflict resolution strategies through a more *positive lens.* More specifically, using Social Learning Theory (Bandura, 1969), the study predicted that first-grade children would model their parents' use of constructive marital conflict styles (e.g., compromise, problem-solving) in interactions with their younger siblings. However, instances of observed sibling constructive

strategies were rare, making proposed individual analyses unfeasible. Siblings employed negotiation strategies (e.g., sharing) to resolve a dispute on only three occasions. Possible explanations for the limited negotiation findings include that, overall, constructive strategies occur less frequently than destructive strategies in the literature (Rinaldi & Howe, 1998; Siddiqui & Ross, 1999) and the small sample size in the current project may have affected the number of negotiation strategies observed. Additionally, from a developmental perspective, first-grade children and their younger siblings may not have the cognitive sophistication to enact constructive strategies and, thus, may rely heavily on destructive strategies to resolve disputes (Howe, 2007, personal communication).

Given the few constructive solutions to conflict that we observed, we reasoned that even if conflicts are not constructively resolved, young children may make attempts at a constructive solution before resorting to destructive tactics. Thus, they may display strategies such as attempting to share an item or offering an alternative piece to their sibling. However, such attempts may not always be successful and conflicts may ultimately end more destructively, despite the child's best efforts. In light of this possibility, children's attempts at negotiation and distraction were coded during the sibling observation. Unfortunately, similar to negotiation resolution findings, attempts at more constructive conflict styles were rare, as only 9 instances were observed. As a result, the current study was not able to explore possible family correlates of sibling conflict attempts. However, greater investigation of children's conflict resolution attempts would be a fascinating avenue of research to pursue with a larger sample.

Following the line of reasoning that first-grade children and their younger siblings are just beginning to develop skills in conflict resolution, we grouped the sibling pairs by their use of destructive and more constructive conflict strategies. Passive conflict resolution styles, such as disengagement, distraction, and third-party intervention, have both constructive and destructive components (Howe et al., 2002). As suggested by Nina Howe (personal communication, 2007), at a young ages, managing a conflict through any means other than destructive (stand firm-surrender) styles may represent a more constructive resolution attempt. Even a dispute resolved by disengaging from the conflict (e.g., ignoring the other partner, moving onto a new piece) may be more constructive than use of only adversarial strategies (e.g., grabbing the piece). Offering the other child an alternative piece (e.g., distraction) or asking for adult assistance (e.g., third-party intervention) may, again, reflect greater emerging skills at conflict resolution than only using destructive styles. As such, a dichotomous outcome variable was created to classify siblings pairs who employed *only* destructive (stand firm-surrender) conflict styles and sibling pairs who engaged in at least one conflict ended through passive or constructive resolutions. Grouping siblings' conflict resolution patterns in a manner distinguishing sibling pairs who used only destructive styles from sibling pairs who used an array of conflict strategies yielded interesting connections to fathers' marital conflict styles.

Predicting Observed Sibling Conflict Resolution: Unique Role of Fathers' Compliance

The first research question hypothesized that mothers' and fathers' Time 1 and Time 2 constructive and destructive marital conflict styles would relate to their children's use of similar conflict strategies with their siblings in an observed interaction. Fathers'

compliance both across the transition to parenthood and as their oldest child entered the first grade emerged as a predictor of several sibling observational outcomes. In fact, fathers' Time 1 and Time 2 reports of compliance emerged as the only parent conflict style related to sibling pairs classified as using only destructive conflict resolution styles. Additionally, fathers' greater use of compliance strategies, both at Time 1 and Time 2, were related to more observed sibling conflict episodes.

Both Family Systems (Minuchin, 1985) and Social Learning (Bandura, 1969) theories offer potential frameworks for understanding the connection between fathers' compliance and siblings' greater likelihood of using destructive conflict strategies. Compliance conflict styles are defined as "giving in and not defending one's position" in disagreements (Kurdek, 1994). Given the relationship between fathers' compliance at both Time 1 and Time 2, Family Systems theory (Minuchin, 1985) suggests that fathers' patterns of complying in marital conflicts may develop early and are maintained and reinforced through the larger family system. As a result, from a Social Learning (Bandura, 1969) perspective, children may have less opportunity to observe and model parent constructive strategies. In addition, it is also possible that the *surrender*, or giving in, component of sibling destructive strategies may parallel fathers' compliance in marital conflicts. Further, children of fathers' who are more avoidant in resolving marital conflicts may also be more passive in sibling disputes.

The influence of fathers' compliance on sibling outcomes may be further explicated by the "spillover hypothesis," which provides an account of the indirect association between marital conflict and child outcomes via parenting behaviors (e.g., Brody, Stoneman, & McCoy, 1994; Erel & Burman, 1995; Erel, Margolin, Christensen,

& John, 1996; Erel, Margolin, & John, 1998). Specifically, this hypothesis suggests that as marital conflict and marital negativity increases, parents may become more negative in their parenting behaviors, which, in turn, may lead to higher negativity in the sibling relationship. Fathers' compliance in conflicts may indicate a pattern of decreased investment and greater ambivalence in their marital relationship. If fathers' compliance provides an indication of his decreased commitment or investment in the marital relationship, this indifference may affect marital satisfaction in general and result in increased marital conflict. It follows from the "spillover hypothesis" that increased marital conflict related to fathers' passive, compliant behaviors may result in greater negativity in parent-child interactions, which may undermine a child's ability learn constructive conflict resolution skills. Furthermore, fathers' compliance may affect the quality of his parenting behaviors directly. That is, fathers' who comply in marital conflicts may also be more compliant and display less interest in parenting, which may affect child adjustment and sibling conflict resolution styles. It is also important to consider the bidirectional nature of the "spillover hypothesis" as it is equally likely that difficulties in the sibling relationship affect parenting quality, which, in turn, affects marital satisfaction.

Characteristics of parent-child interactions have been linked to sibling relationship quality (e.g., Rinadi & Howe, 2003). Parenting behaviors, such as warmth and involvement, may differ for older versus younger fathers. In the current project, compared to younger fathers, older fathers were more likely to have children classified as using constructive sibling conflict strategies and to rate their children as more positively involved, displaying less conflict, and less avoidance. The limited research available on

fathers' age and parenting has indicated that older fathers may be better able to connect and respond to their children's needs (Shannon, Tamis-Lemonda, & Cabrera, 2006). Perhaps, compared to younger fathers, older fathers in the current sample displayed more responsiveness, patience, and less heated discussions in both marital and parent relationships, which may directly and indirectly affect the quality of their children's sibling relationships.

Consideration of the role of fathers' compliance in relation to partners' conflict styles is important. Research on couples' conflict underscores the influence of partners' particular styles of resolving disputes on relationship satisfaction and stability (Gottman, 1994; Kurdek, 1994). For example, low rates of positive problem-solving and high rates of heated conflict engagement have been associated with relationship dissolution (e.g., Kurdek, 1994). Compared to problem-solving, engagement, and withdrawal, Kurdek (1994) found that compliance strategies were unique, being the least likely of the four conflict styles to be associated with a change in relationship satisfaction. Kurdek (1994) argued that the meaning or power of compliance strategies as an influence on relationship satisfaction may depend on the other partner's conflict style. For example, "giving in" or complying in disagreements with a partner who problem-solves may have different implications for relationship satisfaction, than "giving in" to a partner who employs heated demands.

Marital Conflict Styles as Predictors of Sibling Positive Connectedness, Negative Affect, and Total Conflict

A second research question addressed how mothers' and fathers' Time 1 and Time 2 conflict styles were related to siblings' positive connectedness, negative affect,

and total conflict as observed in the interaction task. It was hypothesized that parents' constructive strategies would predict greater sibling positive connectedness as well as less negative affect and total conflict. Alternatively, parent destructive marital conflict styles were hypothesized to relate to less sibling positive connectedness with greater ratings of sibling negative affect and conflict.

With a few notable exceptions, however, marital conflict styles were not found to be related to sibling affect and conflict frequency. There are several potential explanations for the lack of findings in the current study. On average, siblings in the current project appeared rather neutral, rarely displaying instances of high positive connectedness (e.g., joint laughter, smiling) or high negative affect (e.g, yelling, pushing). Additional explanations for the relative lack of variability may include the short duration of the task, the one-time interaction, as well as coding siblings jointly rather than individually. Furthermore, prior research has consistently reported low levels of displayed affect in siblings when observational coding is employed (e.g., Erel, Margolin & John, 1998).

Despite the limited variability in sibling joint affect, interesting findings emerged relating to children's positive connectedness and total observed conflict. Age spacing predicted positive sibling interactions, consistent with research conducted with preschool children, (Erel, Margolin, & John, 1998). In the current project, sibling pairs who were closer in age displayed more positive connectedness than sibling with a wider age gap. It is possible that children closer in age are at similar developmental stages, which may facilitate shared fun and play that may differ from individual sibling behaviors directed toward each other.

One of the most important findings from the observational data was the link between mothers' and fathers' marital conflict styles and the frequency of sibling conflict. Previous research has linked marital conflict and dissatisfaction with observations of increased sibling conflict (e.g. Brody et al., 1992; McGuire, McHale, & Updegraff, 1996; Stocker & Youngblade, 1999). The current study significantly contributes to the literature by connecting particular styles of marital conflict with observed sibling conflict. The ways in which mothers and fathers resolved and communicated with each other during marital disagreements related to the amount of conflict observed between their children. For example, mothers' problem-solving at both Time 1 and Time 2 was related to less observed sibling conflict. Mothers who worked through disagreements constructively with their partners had children who displayed fewer sibling conflicts. Problem-solving strategies have been associated with greater marital satisfaction (e.g., Kurdek, 1994), and links between parents' marital happiness and children's sibling relationship quality have been cited in the literature (e.g., McGuire, McHale, & Updegraff, 1996). In the current project, mothers' greater use of problem-solving may indicate increased marital happiness which may impact the overall level of their children's sibling conflict. However, the relationship between mothers' problem solving, both longitudinally and concurrently, with sibling conflict underscores the potential positive impact of constructive marital conflict styles on sibling conflict behaviors.

The importance of mothers' and fathers' use of withdrawal strategies across the transition to parenthood also emerged through examination of the sibling observational data. Fathers' greater use of withdrawal at Time 1 was linked to higher ratings of sibling

positive connectedness. Mothers' use of withdrawal conflict styles at Time 1 predicted fewer observed sibling conflicts. These findings for Time 1 withdrawal strategies are unique in that early reports of marital conflict styles were related to sibling outcomes, yet current reports were not related. Research has suggested that the use of marital withdrawal strategies may be especially important during the transition to parenthood. Crohan (1996) suggested that parents are more likely to become quiet and withdrawn during conflicts with their partners following the birth of their first child. In understanding the influence of passive conflict strategies on the marriage and child outcomes, Crohan (1996) posits that avoidance and withdrawal strategies may have both positive and negative functions. In a more constructive light, withdrawing from a conflict "in the heat of battle" allows emotions to cool down and has predicted greater marital happiness. Thus, withdrawing from conflicts across the transition to parenthood may have unique positive implications for the marriage that influence their children's level of conflict. It would be important, however, to investigate whether parents re-visit previous conflicts in a more constructive manner in understanding connections to sibling relationships.

Support for a "Balance Hypothesis" of Parent Conflict Styles

Limited research has linked parents' constructive and destructive styles of resolving marital disagreements with their perceptions of their children's sibling relationship quality. The second research question explored how mothers' and fathers' Time 1 and Time 2 marital conflict styles might relate to their own reports of their children's sibling relationships.

Findings revealed that while mothers' conflict styles were linked to reports of sibling positive involvement, conflict and rivalry, and avoidance, few such relationships emerged for fathers. The ways in which mothers, in particular, handle marital conflicts may relate to their perceptions of their children's sibling relationships. Mothers who used greater positive-problem solving styles reported less sibling conflict and rivalry. In contrast, mothers who reported more (heated) engagement rated increased sibling conflict. One of the few findings that emerged for fathers also indicated that higher engagement predicted increased sibling conflict. For the most part, the results suggest that parent conflict styles are more strongly linked to perceptions of negative sibling interactions than positive involvement. Further, the current project is consistent with the literature linking destructive marital conflict styles with higher reports of sibling conflict (Rinaldi & Howe, 2003). However, the study also indicated that mothers' use of more constructive strategies related to ratings of less frequent sibling conflict, suggesting a possible role for constructive parental strategies in the development of siblings' conflict skills. Yet, with these few exceptions, individual parent conflict styles were not found to be related to sibling behavior.

The current study supports a "balance hypothesis" in understanding the influence parents' conflict styles on sibling relationships. It follows from work by Brody (1998) and Gottman (1994) that the relationship between destructive marital conflict styles relative to the amount of constructive positive problem-solving would have stronger relationships with sibling outcomes than destructive qualities alone. Particularly for mothers, the impact of both compliance and withdrawal conflict styles on sibling relationship outcomes were significantly moderated by mothers' use of positive problem-

solving. Mothers' who reported high use of compliance strategies coupled with high use of problem-solving, tended to rate their oldest child as displaying more positive behaviors and less conflict with his or her younger sibling. Further, withdrawing from conflicts in the context of high problem-solving predicted less sibling conflict and avoidance. A trend indicated that mothers' who reported using high levels of heated engagement in the context of high problem-solving reported less sibling conflict. The findings highlight that destructive styles impact maternal ratings of sibling interactions differently depending on whether mothers engage in low or high levels of problem-solving.

Differences emerged in associations between mothers' and fathers' engagement and positive problem-solving across the transition to parenthood and sibling avoidance. For mothers, the combination of both low engagement and low problem-solving predicted greater sibling avoidance. This particular combination of conflict styles may indicate less investment and communication in the marriage. From a Social Learning perspective (Bandura, 1973), mothers may model avoidant conflict behaviors in the marital relationship, and children, in turn, may learn to avoid conflict in their interactions with their sibling. In contrast, for fathers, lowest levels of sibling avoidance were associated with low use of engagement and low use of problem-solving across the transition to parenthood. Perhaps, fathers who themselves are more conflict avoidant (low engagement, low problem-solving), perceive any conflict attempts by their child as more assertive and less avoidant and thus rated their children as more involved and less avoidant.

Comparison of Observation and Parent-Report Measures

Observational and parent-report data was obtained on children's sibling relationships in exploring connections to parents' marital conflict resolution styles. With regard to sibling conflict, the sibling observation included measures of both sibling conflict resolution classifications (e.g., constructive or destructive) as well as overall conflict frequency. Fathers' Time 1 and Time 2 reports of compliance emerged as the only parent style related to sibling pairs' greater likelihood of using only destructive strategies. Parent ratings of the sibling relationship also assessed sibling conflict and rivalry. However, the measure of conflict and rivalry measured the overall sibling conflict frequency rather than particular styles of sibling conflict resolution. Comparisons between observational and parent-reports of sibling conflict frequency yielded similar findings with regard to mothers' use of constructive marital conflict. Mother's Time 2 reports of problem-solving were related to less observed and reported sibling conflict. However, fathers' Time 1 and Time 2 reports of compliance and mothers' Time 1 reports of withdrawal were related to less observed sibling conflict, but not parent reports of sibling conflict.

Different patterns emerged from the observational and parent report data for mothers and fathers. Fathers' conflict styles, specifically, fathers' compliance, was implicated in sibling observed conflict resolution strategies and total conflict. In contrast, for parent reports of sibling behaviors, mothers' conflict styles were most linked to their own child ratings. Particularly when exploring destructive conflict in relation to more constructive conflict, the ways in which mothers handled marital disagreements was associated with perceptions of differences in children's sibling relationships. The influence of destructive marital conflicts on sibling relationships likely needs to account

for several factors. For example, particularly for mothers, the "balance" of destructive conflict styles relative to problem-solving strategies was related to perceptions of the sibling relationship. Future studies may find that destructive conflict strategies operate differently in relation to the combination of partner conflict styles in understanding sibling conflict patterns.

Conclusions, Limitations, and Future Directions

The results of the current study need to be viewed in the context of its limitations. First, the project included a relatively small sample of first-grade children, their parents, and younger siblings. As data collection for the Time 2 assessment has not been completed, only 50 families and 40 sibling observations were included in the analyses. This small sample size is consistent with sibling observational research; however, the use of a larger sample size would increase the statistical power and interpretation of the results.

It should also be noted that the current project included a primarily White, two-parent sample from within a unique and often understudied population. While exploring family and sibling relationships within dual-earner, working-class families is a particular strength of the project, the results cannot be generalized to other populations. For example, examining potential connections between parent and sibling conflict resolution patterns within different family structures (e.g., single-parent families, stepfamilies), families with older children, and families of color may yield potentially different findings.

The current project was limited to including two-parent families from the larger transition to parenthood study who had a second child within a 3.5-year age range of their

oldest, first-grade child. The breakdown of the sibling gender constellations that emerged was rather unequal. Older sister-younger brother sibling pairs comprised nearly half (44%) of the sample. While some interesting gender trends emerged with regard to adversarial conflict resolutions, the findings warrant further investigation within a larger and more equivalent representation of sibling gender pairs. Additionally, while the age range between siblings is consistent with the literature, different findings may emerge with closer-in-age siblings as well as older sibling pairs. Although the study found that sibling age spacing was related to only one sibling outcome, observed positive connectedness, it is possible that older siblings or siblings who are closer in age may have similar developmental and cognitive abilities that may facilitate conflict resolution.

As previously discussed, the lack of variability in conflict resolution strategies displayed during the sibling observation comprised an additional limitation of the current study. While similar difficulties have been highlighted in the observational literature, the limited number of sibling negotiation strategies displayed in the current study resulted in an inability to conduct planned analyses. Creating a dichotomous variable of siblings' conflict strategies provided a means to examine the data as well as a first step towards connecting parent and sibling conflict styles. However, with greater variability in observed constructive and destructive sibling conflict styles, more specific analyses between sibling and parent styles could be conducted, perhaps with greater results. More naturalistic observations of sibling interactions may benefit future work and yield greater variability in conflict resolution styles. For example, observations over a greater length of time or during a more natural setting (e.g., meal times) may produce a broader range of behavors. Increased variability in conflict resolution styles may produce interesting

connections between parents' positive problem-solving and children's sibling negotiation as well as parents' (heated) engagement and sibling adversarial resolutions.

Finally, it should be noted that an additional strength of the project was the use of multiple methods to assess sibling relationship outcomes, including both observational and parent questionnaire data. However, a potential limitation of the current project was the use of only parent reports of marital conflict styles. Additionally, the parent report measure of sibling behaviors provided an overall measure of sibling conflict, but did not assess specific sibling conflict resolution strategies. Important future research directions include incorporating observations of parent conflict discussions to projects exploring links between parent and sibling conflict behaviors.

The current project inspired additional directions for future studies on sibling conflict resolution patterns. For example, emerging research in the field of sibling relationships has included new sibling observational methods and interactions (Ross, Ross, Stein, & Trabasso, 2006). Using similar conflict discussion procedures used to identify couples' conflict behaviors (e.g., Gottman, 1994) , work by Ross and her colleagues (2006), asked middle-class children between the ages of 4 and 12 to identify, discuss, and attempt to resolve an ongoing dispute with their sibling during a 10-minute observation. Results indicated that a higher proportion of conflicts were resolved through negotiation (42%) with the discussion procedure than typically found in the literature. This exciting project also highlights future research opportunities to link parent marital conflict discussions and sibling conflict discussions.

Additionally, results from the current project provide a glimpse into possibilities that the gender composition of the sibling dyad may have implications for conflict

resolution styles, particularly which child *stands firm* and which child *surrenders*. Future sibling research should continue work by McHale, Updegraff, Helms-Erikson, and Crouter (2001) in exploring how parents' gender role beliefs and attitudes may affect children's behaviors in sibling relationships. Further exploration of sibling gender differences and parent gender attitudes (e.g., egalitarianism, traditionalism) may be especially interesting within working-class, dual-earner samples.

Future studies should also address relationships between particular combinations of mothers' and fathers' conflict styles and sibling conflict resolution patterns. For example, the demand-withdrawal pattern of conflict resolution has received wide attention in the marital literature (e.g., Kurdek, 1994; Sillars, Canary, & Tafoya, 2004). It would be interesting to explore whether having parents who engage in a demand-withdrawal pattern of conflict management might relate to how sibling pairs resolve conflicts. Similarly, considering the current study's findings with fathers' compliance, future studies should examine how fathers' compliance may act differently when paired with different mother styles of conflict on sibling conflict resolution strategies. Further, the potential indirect relationship of marital conflict styles through parenting on the sibling relationship is an important consideration for future work.

From a methodological standpoint, an intriguing research question emerged through the observational coding process. I benefited from having an extremely dedicated team of undergraduate and graduate coders. Early in the training process, I realized there was a difference in how sibling conflicts were perceived by different coders based on his or her own "sibling status." For example, it seemed that being an only sibling created a number of challenges for one coder. It became clear that where

other coders (who themselves had siblings) picked up rather easily the criteria for sibling conflict, the coder, who was an only child, initially rated any joint elevation in children's voices (e.g., even if singing about farm pieces) as conflict. After many training sessions, this coder improved in identifying sibling conflict. However, her experience inspired an addition avenue for sibling research, namely, how having a sibling or not might affect the sibling coding process.

Implications

The current project extends the literature exploring aspects of parents' marital quality with qualities of the sibling relationship. Research linking marital satisfaction, and marital conflict, in particular, with child outcomes is extensive (e.g., Cummings & Davies, 2002). However, few researchers have examined whether the manner in which marital conflicts are handled, through constructive or destructive means, might affect child and sibling relationships. The current study builds on Rinaldi and Howe's (2003) pioneering work examining potential connections between conflict resolution styles across parent and sibling relationships, which relied exclusively on questionnaire data. The current study extends work by Rinaldi and Howe (2003) by specifically exploring whether parent constructive and destructive styles of marital conflict relate to their children's sibling relationships and conflicts through both observational and parent reports of the sibling relationship.

Results from the mothers' and fathers' reports of the sibling relationship add to the field by suggesting the importance of considering destructive styles relative to the amount of constructive styles that parents' use when considering implications on children's sibling relationships. For example, mothers and fathers may not always "focus

on the problem at hand" or "sit down and discuss differences constructively." They may even "tune the other person out" at times or "not defend their position" at other times. The key component to sibling outcomes may be that parents use problem-solving or constructive techniques some of the time that balances the use of more destructive styles. These data also remind therapists who work with families the benefits of teaching family members effective problem-solving and negotiation skills for managing disagreements (that may temper the use of destructive strategies). They further underscore the importance of considering all members of the family, especially fathers, as key targets for research and intervention.

APPENDIX A

CONFLICT RESOLUTION STYLES INVENTORY (KURDEK, 1994)

Using the scale 1=Never and 5=Always, rate how frequently you and your partner use each of the following styles to deal with arguments or disagreements in your relationship.

1	2	3	4	5
Never	Rarely	Some of the time	Most of the time	Always

	A) I...	B) My partner...
1.	Launch personal attacks	
	1 2 3 4 5	1 2 3 4 5
2.	Focus on the problem at hand	
	1 2 3 4 5	1 2 3 4 5
3.	Remain silent for long periods of time	
	1 2 3 4 5	1 2 3 4 5
4.	Not willing to stick up for myself	
	1 2 3 4 5	1 2 3 4 5
5.	Explode and get out of control	
	1 2 3 4 5	1 2 3 4 5
6.	Sit down and discuss differences constructively	
	1 2 3 4 5	1 2 3 4 5
7.	Reach a limit, "shutting down," and refuse to talk any further	
	1 2 3 4 5	1 2 3 4 5
8.	Become too compliant	
	1 2 3 4 5	1 2 3 4 5

1	2	3	4	5
Never	Rarely	Some of the time	Most of the time	Always

	A) I…	B) My partner…
9.	Get carried away and say things that I don't mean	
	1 2 3 4 5	1 2 3 4 5
10.	Find alternatives that are acceptable to both of us	
	1 2 3 4 5	1 2 3 4 5
11.	Tune the other person out	
	1 2 3 4 5	1 2 3 4 5
12.	Do not defend my position	
	1 2 3 4 5	1 2 3 4 5
13.	Throw insults and digs	
	1 2 3 4 5	1 2 3 4 5
14.	Negotiate and compromise	
	1 2 3 4 5	1 2 3 4 5
15.	Withdraw, act distant and not interested	
	1 2 3 4 5	1 2 3 4 5
16.	Give in with little attempt to present my side of the issue	
	1 2 3 4 5	1 2 3 4 5

APPENDIX B

SIBLING RELATIONSHIPS IN EARLY CHILDHOOD (SREC) (VOLLING, 1997)

Complete this form only if your 6-year-old child has siblings.
Brothers and sisters do very different things with one another. Using the following scale, please indicate the number that best describes the feelings and behaviors of your child toward his/her sibling(s):

1	2	3	4	5
Never	Seldom	Sometimes	Often	Alway

1.	Shares play things when brother/sister wants to play with them.	1	2	3	4	5
2.	Is happy to see brother/sister after they have been apart.	1	2	3	4	5
3.	Misses brother/sister when they are apart.	1	2	3	4	5
4.	Feels jealous of brother/sister.	1	2	3	4	5
5.	Is happy when brother/sister goes away.	1	2	3	4	5
6.	Gets angry with brother/sister.	1	2	3	4	5
7.	Initiates play or interactions with brother/sister.	1	2	3	4	5
8.	Has physical fights with siblings (not just for fun).	1	2	3	4	5
9.	Has fun or a good time with brother/sister.	1	2	3	4	5
10.	Is cruel or does mean things to sibling.	1	2	3	4	5
11.	Comforts or soothes sibling when he/she is upset.	1	2	3	4	5
12.	Teases or annoys sibling.	1	2	3	4	5
13.	Accepts sibling as a playmate.	1	2	3	4	5
14.	Bosses or tells sibling what to do.	1	2	3	4	5
15.	Stays away from sibling if possible.	1	2	3	4	5
16.	Fusses and argues with sibling.	1	2	3	4	5
17.	Frowns or pouts when sibling has to be with him/her.	1	2	3	4	5
18.	Does nice things for younger sibling.	1	2	3	4	5

APPENDIX C

SIBLING CONFLICT EPISODES CODES

Presence of Conflict

(modified from Volling & McElwain, 1998, Parker & Herrera; Park & Waters/control Youngblade and Belsky, Howe et al., 2002)

This code captures the degree to which the sibling dyad is in conflict or disagreement with each other. Children scoring high on this code are involved in escalating and intense conflict episodes, as well as recurrence of conflict issue over the course of the interval (for us, 30 seconds).

Definition of conflict: (from Howe, Rinaldi, Jennings, & Petrakos, 2002)

A conflict is an exchange containing mutual opposition – in other words, each partner must do or say something oppositional to the other.

Oppositional behavior includes objecting to something the other child has done or said, interfering with what the partner wants to do, disagreeing with the partner, taking or trying to take an object from the partner, accusing the partner of something, or intentionally doing something to bother the partner.

Identifying Conflict Incident – Begins with first oppositional turn (Slomkowski & Dunn, 1992; Herrera & Dunn, 1997)

Example: Child A takes a Mr. PotatoHead piece from Child B
Child B says, "Hey, give that back, that's mine."
Child A says, "I want to use that for something."

**The shortest possible conflict consists of two oppositional turns, one by each partner.

Turn 1: Child A takes a toy away from Child B
Turn 2: Child B takes it back (No further opposition from Child A.

If Child A does something innocent (experimenter's judgment call), Child B objects, and Child A does not respond, the exchange is not a conflict. However, if Child A does object, the exchange is a conflict.

Example: Turn 1: Child A: "I'm going to set up my village like this."
[innocent remark]
Turn 2: Child B: "No, that's not how you do it."

[oppositional remark]
Turn 3: Child A: "Yes, it is" [oppositional remark]

Longer conflicts are just continuation of these 2- or 3-turn conflicts.
**Note:

Conflicts do not need to include verbal exchanges, but may occur when children engage in a physical struggle over a toy.

Also, children can just have verbal disagreement (which does not involve grabbing, anger, etc.)

**Conflict does not need to involve aggression.

Each conflict consists of a series of turns, more or less alternating between the partners.

Conflict turn = all utterances of 1 child bounded by utterances of another child
(can also be nonverbal behavior)

Basically, it has to be back and forth

A turn may consist of:

- one utterance or behavior
- an utterance and a behavior by the same person at more or less the same time, with a common purpose
- a series of utterances and/or behaviors by the same person, with little pause between them, with a common purpose.

A new turn begins when:

- the other partner says or does something
- the current speaker/actor pauses for more than 5 seconds
- the current speaker/actor's utterances or behaviors show a clear change in purpose

Recording Conflict:

Start counting turns with the first utterance or behavior in the conflict sequence.

A. If the conflict starts with an oppositional behavior, the oppositional behavior is counted as the first turn.

Example: Turn 1: Child A takes toy away from Child B.
Turn 2: Child B grabs toy back.

Turn 3: Child A screams.

B. If the conflict starts with an opposition behavior in response to an innocent behavior, the innocent behavior is counted as the first turn, even though it occurred before there was any opposition.

Example: Turn 1: Child A picks up a toy that was not clearly in Child B's possession.
Turn 2: Child B protests.
Turn 3: Child A refuses to return toy.

C. Stop counting turns with the last utterance or behavior in the conflict sequence that is clearly a response to the partner and is clearly related to the topic of the conflict.

a. If the conflict ends with a turn indicating a resolution of the conflict, we will include it in next coding step. (This will also include ignoring/disengaging behavior.)

D. The conflict is considered over if any of the following occur:

a. There are two non-oppositional turns in a row (from one partner or from both partners)

i. Two (conversational) turns that were not related to the conflict. (p.250)
ii. Two "back and forths" not related to conflict

b. There is a pause of 10 seconds or more.

c. One partner disengages and stops responding to the other, even if the other partner keeps trying to get a response.

d. A resolution is reached

e. One or both children leave the situation

**Note:

Conflicts do not need to include verbal exchanges, but may occur when children engage in a physical struggle over a toy.

Also, children can just have verbal disagreement (which does not involve grabbing, anger, etc.)

For coding sheets:

1. Write down from counter time that conflict begins and time conflict ends. You will have to become good friends with the rewind button to get the best estimate of these times.

2. **Additional Codes: (from McElwain & Volling coding manual)**

For each 30-second interval: (*I will mark for you the times that each interval ends)

*Start coding when interviewer ends instruction for the task –

Code:

0 --- No conflict present/no conflict occurs during the 30 seconds

1 --- Low/moderate degree of conflict present

Children are engaged in one brief, low-level conflict during the interval. Conflict does not escalate and is not extended. Not intense conflict

2 --- High degree of conflict present

Children engage in one extended conflict episode in which the children are in intense opposition with one another. Conflict escalation may also involve escalation in emotional intensity or the use of aggressive behaviors. A brief, but intense conflict may be coded as two if there are high degrees of affect/aggression present. Think high intensity and escalation of emotion.

*Very few "2" High degree of conflict were present. Conflict episodes were collapsed into "0" no conflict and "1" conflict.

APPENDIX D

CODES FOR CONFLICT RESOLUTION STRATEGIES

**Use these codes for both strategies attempted and final outcome resolution

**Based on Howe (1992, etc.) coding scheme and McElwain and Volling (1997) coding

For each conflict episode, you will code (from 7 codes):

Conflict resolution strategy: Tactic used by the children immediately before the end of a conflict; it is what apparently brings the conflict to an end. Always note which child (TC or Sib) used the tactic – depending on the tactic it could be one or both of them.

**I am most interested in TC strategies (because all TCs are relatively the same age) but for now also code Sib behavior as well.

Constructive Strategies: (also called Positive Problem Solving approaches)

Strategies include reasoned argument, justification, and negotiation

Negotiation (NEG): (Joint resolution or compromise)

One child suggests a compromise, by sharing, taking turns, trading objects. Children are able to come to a satisfactory resolution that takes into account the needs/wants of both children. These resolutions will often involve compromises, or offers of alternative toys/ideas in order to meet the needs of both children.

Conflict ends after clear negotiation by both partners or after one partner suggests a compromise and the other partner accepts it. There must be a satisfactory outcome for both children (there is no winner or loser). Involves sharing, taking turns with, or trading objects.

Appeal to the rules (RUL):

One child basically uses the instructions that we have provided to attempt to end conflict. (often will use almost our exact phrasing)

Examples:

Child A: You can't make it like that...that's ugly
Child B: We can make the pieces anyway we want (* RUL)
Child A: Okay

**You will also code negotiation attempts

Child A: "Here you can have the hair, but I want the mustache."
Child B: accepts hair

Destructive Strategies:

Strategies include the use of coercive, aggressive, or avoidant strategies (where either 1 or both of the children are left dissatisfied with the outcome)

1. Adversarial/Submission in conflict resolution: (SF/SURR) There is a clear winner and loser, because one child stands firm and insists on his/her way and the other surrenders. Children settle the conflict on their own, but the resolution is unsatisfactory. One child submits to the needs of the other child, and thus the resolution is one-sided. Submitting may include leaving the conflict situation.

    a. Standing Firm (SF)

    Conflict ends because one partner insists on his/her original position until he/she gets what he/she wants; insistence can be verbal or physical.
    (Used only when one partner's insistence has an effect on the other partner)

    b. Surrendering (SURR)

    Conflict ends when one partner gives in to the other and gets nothing in return; the one surrendering must make it clear that this is what they are doing, either verbally or behaviorally.

    Behavioral indications of surrendering: backing off, acknowledging mistake, apologizing, giving up object, moving out of the partner's way, joining in partner's activity, or showing signs of passive acceptance (e.g., sighing, looking down, stopping play to watch partner, etc.)

        i. Example: Child A: "Okay, stop, stop the rain."
        Child B: "No, it takes a long time to stop raining. Hey Maria, when it isn't raining, the ducks go inside, you silly."
        Child A: "Okay, it's not raining."
        Child B: "It is raining." [Insistent voice]
        Child A: "Oh ya,...it's raining."

    Code here would be SF/SURR

Conflict Avoidant Strategies: (not necessarily purely constructive or destructive)

1. Passive

    c. Disengagement/Ignoring (DISN)

    Conflict ends when one partner ignores the other or both partners disengage from the interaction; in either case, each partner moves on to something new.

    (Can be used regardless of who gets what they want – key issue is that the interaction is broken, and the broken interaction is the primary reason the conflict ends.)

    d. Distraction (DIST)

    Conflict ends with one partner giving the other something unrelated to what was sought and giving up nothing him/herself, or changing the subject to distract the partner from the issue at hand.

        i. Example: TC: I want the horse.
        SIB: No, I get it.
        TC: But I want it.
        SIB: Here, you can have the cow.
        TC: Okay

2. Third-Party Intervention/Involve Adult (3RD):

Conflict ends when bystander intervenes or is asked to intervene and the intervention
ends the argument.

This code also includes threatening to tattle on the other to end conflict.

        i. Example: Child A: "I want to make the corn one." (grabs it)
        Child B: "Wait, I'm using it!." (grabs back)
        Child A: "Amy! (Examiner)

Indeterminate (IND)

Strategy used does not fit any of the categories and you cannot tell what caused the conflict to end. (Use as last resort!)

APPENDIX E

SIBLING (EXPLICIT) POSITIVE CONNECTEDNESS

(*From Howe, 1992 – Coding Scheme for Reciprocal-Complementary Study (Positive Tone))
(*From McElwain & Volling, 1998, Codebook for Friend and Sibling Visits – Shared Positive Affect)

This code captures explicit joint pleasure; giggling or laughing together. Children express positive affect/smiling/laughing which is directed at the same event. Children may also demonstrate mutual eye contact and positive affect simultaneously, but this is not necessary in order to code shared positive affect.

Positive affect/connectedness includes verbal statements (e.g., praise) or overt behaviors directed at the sib such as smiles, laughter, hugs, kisses which denote a friendly sense of affection or sibling interaction.

Smiles at the camera or research assistant are not counted

Positive affect/connectedness also includes the positive tone of the interactions. Tone is defined as the degree of warmth between the sibs, the friendly quality of the interactions, the sense of fun or degree of relaxed exchanges between the siblings.

Some 30-second intervals will include a sequence of negative interaction and then very positive ones. The length of the positive interactions should be considered and coded accordingly.

1. No positive physical or verbal shared affect between the siblings. This is because there is negative affect present or there is a sense of "flat affect" or the siblings seem very "serious" and intent on the task. The sibs may be playing separately without looking or talking to each other. They may be uninterested in each other. (This code does not mean that there is necessarily negativity in the relationship, just that during this interval there is no indication of positive connectedness)

2. A brief instance (1) of shared affect/positive connectedness (e.g., siblings smile at each other; siblings briefly laugh or giggle about an event) The tone of the interaction includes a few hints of warmth, interest, and positive connectedness, but overall the children seem pretty distant.

   A code of "2" should be given if there are hints that the siblings are interacting with each other in a positive manner. Mimicking behaviors (e.g., repeating what sibling has said or done (not in a mocking manner)), chatting with one another, and hints of positive relationship.

Also if one sibling asks other to "look at this" and other does look at their piece (without making negative remark) – this may be coded as a "2". (sign of showing interest)

3. A moderate amount of positive connectedness that is verbal, physical, or both.

   There will be 2-3 observable instances of positive connectedness. The tone can be defined by the sense of enjoyment between the sibs. There is generally a friendly, pleasant tone to the play for at least half of the interval (15s). The sibs seem to enjoy each other's company and the warmth between the children is evident to the tone of their voices and quality of the interactions. There may be examples of invitations to play, sharing, conversation.

4. The interval contains a number of examples (3-4) of positive affect/connectedness which are both verbal and physical. There is a distinct sense of a relaxed, friendly, fun tone to the interactions. The sibs seem to be having fun together and are playing together. There may be examples of sharing, or expression of affection, etc.

5. The interval contains many examples of positive affect (5 or more) of both a physical and/or verbal nature. There is a strong sense of friendliness between the siblings. There is a strong sense of warmth between the children as indicated by the tone of their voices and quality of their interactions. The positive tone predominates throughout the interval. There may be a great deal of laughter and the sibs are really having fun together.

APPENDIX F

SIBLING NEGATIVE AFFECT/CONNECTEDNESS

(*From Howe, 1992 – Coding Scheme for Reciprocal-Complementary Study (Negative Affect))

Thinking about:

Aggression – verbal and physical
Teasing and Name-Calling (as opposed to good-natured teasing)
Competitive Behaviors
Whining
Directives/Commands
Arguments – length (e.g., number of turns)

Includes conflict (verbal and physical), controlling and competitive behaviors

1. No physical aggression or teasing. No verbal hostility or protests or disputes. No controlling or bossy statements or directives. No competitive behaviors (e.g., possessive about materials, territory) or complaints. No bossy statements, no complaints.

2. Occasional disputes, but are resolved quickly. Arguments may be only 2 turns. One child may be negative and the other complies or ignores. Mild protest or whining or negotiation about a conflict. Any disagreements over the course of the play are usually solved without anger and by negotiation or concession, although there may be some hints of anger. Occasional suggestions or commands given in a negative or disgusted tone about how the sib should act or what he/she should do (e.g., how to use the farm pieces), which the other sib generally follows. Occasional competitive behaviors (e.g., possessive about materials, territory). There are hints of a negative tone between the siblings.

3. Mild disputes, arguments, whiny complaints or protests. Arguments with 3 turns. Occasional teasing. Child may be irritable or angry while arguing. One sib makes directive comments controlling the others behavior, which the second sib may follow reluctantly or not at all. Mild competitive remarks (e.g., comments re: fairness or sharing of materials). One child is unhappy and whines through about half of the interval (15s). There is a definite sense of a negative tone during a good portion of the interval.

4. Frequent or occasional (but intense) disputes or arguments. Some physical aggression (hit, poke, punch) or teasing (e.g., nasty name calling). Some criticisms of others actions ("You can't make any right.") Instances where one sib physically interferes with the others play, and the second sib may or may not go along with the control. There may be instances of clearly ignoring the sibling.

Frequent competitive remarks or criticisms or complaints which help suggest a negative tone. There may be a distinct feeling that the sibs really do not like being together or that one sib is clearly unhappy or whines throughout the interval. Includes throwing pieces at one another because annoyed or angry with each other.

5. Intense aggression. May include physical aggression, frequent or intense teasing. Frequently criticizes others actions. Frequent bossy statements about the other's play and physically takes over sib's play. Intense signs of competitiveness (e.g., refusal to share materials, space.). Overall, the tone of the interval is very negative.

Table 1: Means and Standard Deviations of Family Demographic Variables (N=50).

	M	Median	SD	Range
Mothers				
Age	35.67	34.71	4.84	26.55-47.52
Income	23,926.04	22,400.00	13,371.00	0-54,400
Work Hours	34.61	37.50	12.27	6.00-58.00
Fathers				
Age	37.52	37.70	4.49	27.56-47.42
Income	38,579.50	36,686.00	16,296.00	0-100,000
Work Hours	48.02	42.50	10.26	27-76
Years Married or Cohab	10.00	9.08	2.89	6.93-23.36
First-Grade Child				
Age	6.87	6.87	.29	6.22-7.50
Gender		19 Boys, 31 Girls		
Younger Sibling				
Age	4.42	4.34	.76	3.14-6.18
Gender		35 Boys, 15 Girls		
Sibling Age Difference	2.45	2.42	.68	.98-3.50

Table 2: Means and Standard Deviations of Independent and Dependent Variables (N=50).

	Mothers		Fathers		
	M	SD	M	SD	t
Independent Variables					
Parent Conflict Resolution					
Time 1 Measure (First Year)					
Time 1 Problem-Solving	3.62	.39	3.73	.50	-1.32
Time 1 Engagement (Heated)	2.25	.52	1.86	.50	4.49***
Time 1 Withdrawal	2.25	.62	2.17	.64	.57
Time 1 Compliance	1.97	.66	2.12	.54	-1.22
Time 2 Measure (First Grade)					
Time 2 Problem-Solving	3.49	.58	3.65	.56	-1.37
Time 2 Engagement (Heated)	2.41	.72	2.18	.74	1.85+
Time 2 Withdrawal	2.68	.77	2.38	.75	2.05*
Time 2 Compliance	2.10	.91	2.07	.73	.171
Dependent Variables					
Parent Report of Sibling Relationships					
Time 2 Positive Involvement	29.90	5.19	30.51	3.62	-.86
Time 2 Conflict and Rivalry	20.61	4.66	19.30	3.49	2.15*
Time 2 Avoidance	6.41	2.12	6.10	1.58	1.14

*+ p< .10, *p<.05, **p<.01, ***p<.001*

		Conflict Resolution Styles		
		Time 1		
Mothers' Conflict Resolution	Problem Solving	Engagement	Withdrawal	Compliance
Time 1 Problem Solving	---	**-.350****	**-.269**+**	**-.243**+**
Time 1 Engagement		---	**.241**+**	-.173
Time 1 Withdrawal			---	**.322***
Time 1 Compliance				---
		Time 2		
	Problem Solving	Engagement	Withdrawal	Compliance
Time 2 Problem Solving	---	**-.612*****	**-.404****	**-.302***
Time 2 Engagement		---	**.388****	-.124
Time 2 Withdrawal			---	**.377****
Time 2 Compliance				---
		Time 1		
Fathers' Conflict Resolution	Problem Solving	Engagement	Withdrawal	Compliance
Time 1 Problem Solving	---	**-.489*****	**-.624*****	**-.510*****
Time 1 Engagement		---	**.464****	.210
Time 1 Withdrawal			---	**.408****
Time 1 Compliance				---
		Time 2		
	Problem Solving	Engagement	Withdrawal	Compliance
Time 2 Problem Solving	---	**-.386****	**-.461****	.101
Time 2 Engagement		---	**.417****	.082
Time 2 Withdrawal			---	.105
Time 2 Compliance				---

*+ p< .10, *p<.05, **p<.01, ***p<.001*

			S-B[a]		S-S[b]		B-S[c]		B-B[d]	
	M	SD	M	SD	M	SD	M	SD	M	SD
Total Conflicts	2.20	.21	2.18	1.47	2.33	1.21	2.60	.89	2.00	1.41

Conflict:	Freq	S-B[a]	S-S[b]	B-S[c]	B-B[d]
Total:	88	37	14	13	24

Conflict Strategies	Freq	S-B[e]	S-S[f]	B-S[g]	B-B[h]
Destructive					
SF (Y)	33	18	5	2	8
SF (O)	27	11	4	8	4
Constructive					
Negotiation	3	3	0	0	0
Appeal	3	0	0	0	3
Passive					
Disengage	16	3	5	2	6
Distraction	3	0	0	1	2
Third-Party	2	2	0	0	0
Indeterminate	1	0	0	0	1
Total:	88	37	14	13	24

Conflict Attempt	Freq	S-B[a]	S-S[b]	B-S[c]	B-B[d]
Negotiation	6	1	3	0	2
Distraction	3	1	2	0	0

	M	SD	M	SD	M	SD	M	SD	M	SD
Positive	1.48	.38	1.44	.237	1.42	.507	1.39	.419	1.60	.48
Negative	1.22	.19	1.20	.157	1.21	.249	1.25	.095	1.25	.25

[a] Older sister-younger brother dyad (n=17), [b] Older sister-younger sister dyad (n=6)
[c] Older brother-younger sister dyad (n=5), [d] Older brother-younger brother dyad (n=12)
[e] Older sister-younger brother dyad (n=14), [f] Older sister-younger sister dyad (n=6)
[g] Older brother-younger sister dyad (n=5), [h] Older brother-younger brother dyad (n=10)

Table 5: Sample Conflict Resolution Scripts.

Conflict Resolution		
Destructive		
Older Stand Firm		
	Older Brother:	(Takes piece by sibling's leg)
	Younger Sister:	No, I want those shoes
	Older Brother:	(keeps shoes) Well, these look like they will go good on her.
	Younger Sister:	That's not a girl.
	Older Brother	(continues to keep shoes.)
Destructive		
Ynger Stand Firm		
	Younger Brother:	Where's mine? (looks around for figure) Hey!
		I was making her! That's mine.
	Older Sister:	(continues to make figure)
	Younger Brother:	(grabs back piece from older sister)
	Older Sister:	(softly) I was just playing with it.
	Younger Brother:	I wanna do it. (angrily, takes pieces off figure and slams it)
		I'm going to make it into a pig. (keeps piece)
Negotiation		
	Younger brother:	I need that for a second. (referring to piece just grabbed)
	Older sister:	Mmmm (no), you can't grab it from me right when I get it.
	Younger brother:	So, when you're done, can I play with it?
	Older sister:	Yes.
Appeal to Rules		

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	Younger brother:	Oh wow, look it. You have to make a carrot thing first.
	Older brother:	No, you don't
	Younger brother:	Look it...
	Older brother:	(interrupts) X, it's up to you want you make, okay?
	Younger brother:	Okay.
	Older brother:	Member', they said you can make anything you want.
Confl Resol Disengage		
	Younger brother:	And [be]cause of you. (points to older brother)
	Older brother:	What did I do?!?
	Younger brother:	Broke my 'tato head.
	Older brother:	No, I didn't
	Younger brother:	(mumbles) …broken.
		(Both go back to playing)
Distraction		
	Younger sister:	Gimmee it! Gimmee it!
	Older brother:	(Pulls farm towards him) Hey! (Pulling back and forth with the farm)
	Younger sister:	I had it first.
	Older brother:	Wait, X, look what I just found…
	Younger sister:	What? (She goes for the new piece)
3rd-Party Intervention		
	Older sister:	X, you took off the door. You weren't supposed to take off the door.
	Younger brother:	It broke off by itself.

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	Older sister:	(Tells Research Assistant). He took off the door.
	Younger brother:	No, I didn't.
	Older sister:	Oh, well it don't have a door.
Resolution Attempt		
	Younger sister:	Hey, he needs hair?
	Older sister:	(Pushes hair her own piece). If you give me the smiley face, I'll give you the hair (Negotiation)
	Younger sister:	How bout you have the pig face? (Distraction)
	Older sister:	Nope
	Younger sister:	But I don't want the pig face. I just want hair.
	Older sister:	Yeah, but you gotta tongue and I wanted a tongue but I don't get it.
	Younger sister:	It needs hairs.
	Older sister:	(Laughs) You said 'hairs'
	Younger sister:	How bout that?
	Older sister:	Okay, give me the smiley face.
	Younger sister:	Da, Da, Da, (singing)
	Older sister:	NOW (Firmly)
	Younger sister:	No.
	Older sister:	(Puts hand over her own figure) Ha, it fell out. (Pause) But, you're a failure.
	Younger sister:	Do you want this kind of hair (broccoli top) or that kind of hair (hair older sister already has on her piece)? (Distraction)
	Older sister:	This (Hits her own figure on the head) But, I'll give you this hair if you give me the smiley face. (Negotiation)
	Younger sister:	No.
	Older sister:	Then, no hair. (Both go back to their own pieces)

Table 6: Correlations among Demographic Variables with Mothers' and Fathers' Reports of Sibling Relationship and Sibling Observation.

	Observed Sibling Interaction			Sibling Relationships in Early Childhood (SREC)		
				Parent Report		
	Total Conflict	Pos Conn	Neg Affect	Pos	Conf	Avoid
Mothers' Demographic Variables						
Age	.164	-.168	-.012	.065	-.035	.136
Work Hours	.082	-.245	.175	.201	-.080	-.147
Years Married	.062	**-.296**$^{+}$	.396	.075	**-.250**$^{+}$	-.218
Fathers' Demographic Variables						
Age	.057	-.223	.054	**.393****	**-.307***	**-.292***
Work Hours	-.019	.038	-.054	-.046	.127	-.043
Years Married	.062	**-.296**$^{+}$	.396	.201	-.212	**-.344***

*+ p< .10, *p<.05, **p<.01, ***p<.001*

Table 7: Logistic Regression Analyses for Mothers' Conflict Resolution Styles Predicting Siblings' Observed Use of Conflict Resolution Strategies (N=35).

	Observed Sibling Conflict Resolution[a]			
	B	SE	Wald	*Exp(B)*
Years Married	.092	.123	.565	1.097
Mothers' Conflict Resolution				
Time 1 Problem Solving	-1.424	1.174	1.470	.241
Time 1 Engagement	-.556	.753	.545	.573
Time 1 Withdrawal	.434	.877	.245	1.544
Time 1 Compliance	-.521	.638	.668	.594
Model $X^2(7)$= 12.290 R^2= .066				
Time 2 Problem Solving	.322	1.209	.071	1.381
Time 2 Engagement	.550	.830	.440	1.734
Time 2 Withdrawal	-.373	.794	.248	.689
Time 2 Compliance	.599	.497	1.456	1.821
Model $X^2(7)$= 7.258 R^2= .053				

*+ p< .10, *p<.05, **p<.01, ***p<.001*

[a] 0=Use of only adversarial strategies, 1=Use of other strategies (e.g., negotiation, distraction, appeal to rules, disengagement, third-party intervention)

Table 8: Logistic Regression Analyses for Fathers' Conflict Resolution Styles Predicting Siblings' Observed Use of Conflict Resolution Strategies (N=34).

	Observed Sibling Conflict Resolution[a]			
	B	SE	Wald	*Exp(B)*
Father's Age	.191	.099	**3.719**$^{+}$	1.211
Fathers' Conflict Resolution				
Time 1 Problem Solving	-1.820	1.296	1.973	.162
Time 1 Engagement	-.196	.885	.049	.822
Time 1 Withdrawal	-.624	.881	.502	.536
Time 1 Compliance	-2.207	1.162	**3.607**$^{+}$	.110
Model $X^2(7)$= 5.766 R^2= .152				
Time 2 Problem Solving	.373	.823	.205	1.452
Time 2 Engagement	-.139	.545	.065	.871
Time 2 Withdrawal	.289	.615	.221	1.335
Time 2 Compliance	-1.743	.787	**4.912***	.175
Model $X^2(8)$= 12.516 R^2= .145				

*+ p< .10, *p<.05, **p<.01, ***p<.001*

[a] 0=Use of only adversarial strategies, 1=Use of other strategies (e.g., negotiation, distraction, appeal to rules, disengagement, third-party intervention)

Table 9: Logistic Regression Analyses for Fathers' Time 1 and Time 2 Compliance Conflict Resolution Style Predicting Siblings' Observed Use of Conflict Resolution Strategies (N=34).

	Observed Sibling Conflict Resolution[a]			
	B	SE	Wald	*Exp(B)*
Father's Age	.210	.107	**3.826***	1.234
Fathers' Conflict Resolution				
Time 1 Compliance	-.822	1.006	.668	.440
Time 2 Compliance	-1.383	.820	**2.849**$^{+}$	.251
Model $X^2(8)$= 18.961*				
R^2= .284				

*+ p< .10, *p<.05, **p<.01, ***p<.001*

[a] 0=Use of only adversarial strategies, 1=Use of other strategies (e.g., negotiation, distraction, appeal to rules, disengagement, third-party intervention)

Table 10: Correlations among Mothers' and Fathers' Conflict Resolution Styles and Siblings' Observed Positive Connectedness, Negative Affect, and Total Conflict Episodes (N=40).

	Observed Sibling Positive Connectedness[a], Negative Affect[b], and Total Conflict		
	Pos Connnect	Neg Affect	Total Conflict
Mothers' Conflict Resolution			
Time 1 Problem Solving	-.051	-.116	-.139
Time 1 Engagement	.142	-.056	-.147
Time 1 Withdrawal	.061	-.100	**-.318***
Time 1 Compliance	.005	.134	.083
Time 2 Problem Solving	-.159	-.161	-.249
Time 2 Engagement	.058	.048	.069
Time 2 Withdrawal	.092	-.064	-.104
Time 2 Compliance	.178	.107	.078
Fathers' Conflict Resolution			
Time 1 Problem Solving	.000	-.090	-.036
Time 1 Engagement	.056	-.149	-.002
Time 1 Withdrawal	.212	.025	-.112
Time 1 Compliance	-.017	-.193	**-.268^{+}**
Time 2 Problem Solving	.040	-.156	-.018
Time 2 Engagement	-.210	-.094	-.067
Time 2 Withdrawal	-.098	.099	-.057
Time 2 Compliance	-.160	**-.277^{+}**	**-.415****

*+ p< .10, *p<.05, **p<.01, ***p<.001*

[a] log transformation to the 10th power used

[b] log transformation to the 10th power used

Table 11: Hierarchical Linear Regression Analysis of Time 2 Total Observed Sibling Positive Connectedness from Fathers' Time 1 Conflict Resolution Styles (N=40).

	1			2		
	B	SE B	β	B	SE B	β
Years Married	-.010^{+}	.005	-.296^{+}	-.010^{+}	.005	-.305^{+}
Fathers' Conflict Resolution						
Time 1 Problem Solving				.045	.053	.195
Time 1 Engagement				.007	.040	.031
Time 1 Compliance				.011	.034	-.059
Time 1 Withdrawal				**.064**$^{+}$	.036	**.355**$^{+}$
Change in R^2					.081	
R^2		.088			.168	

*+ p< .10, *p<.05, **p<.01, ***p<.001*

Table 12: Linear Regression Analysis of Time 2 Total Observed Sibling Conflict from Mothers' and Fathers' Time 1 And Time 2 Conflict Resolution Styles (N=40).

Mothers' Conflict Resolution	B	SE B	β
Time 1 Problem Solving	**-1.060**$^{+}$	.618	**-.297**$^{+}$
Time 1 Engagement	-.384	.432	-.148
Time 1 Compliance	.223	.332	.119
Time 1 Withdrawal	**-1.037***	.390	**-.447***
R^2= .215			
Time 2 Problem Solving	**-1.490***	.700	**-.615***
Time 2 Engagement	-.471	.495	-.272
Time 2 Compliance	.081	.285	.058
Time 2 Withdrawal	-.598	.360	-.337
R^2= .172			
Fathers' Conflict Resolution			
Time 1 Problem Solving	-.385	.668	-.133
Time 1 Engagement	-.126	.511	-.047
Time 1 Compliance	**-.932***	.426	**-.397***
Time 1 Withdrawal	.455	.454	.200
R^2= .134			
Time 2 Problem Solving	.220	.438	.093
Time 2 Engagement	-.020	.309	-.011
Time 2 Compliance	**-.764***	.276	**-.444***
Time 2 Withdrawal	.301	.323	.169
R^2= .193			

*+ p< .10, *p<.05, **p<.01, ***p<.001*

Table 13: Correlations among Mothers' and Fathers' Reports of Conflict Resolution Styles and Parents' Reports of the Sibling Relationship (N=49).

		Time 2 Sibling Relationship in Early Childhood		
Mothers' Conflict Resolution		Positive	Conflict	Avoid
	Time 1 Problem Solving	.185	-.231	-.080
	Time 1 Engagement	-.126	.224	.049
	Time 1 Withdrawal	.035	.142	-.017
	Time 1 Compliance	-.015	.016	.073
	Time 2 Problem Solving	.173	**-.426****	**-.246**$^{+}$
	Time 2 Engagement	-.163	**.446****	**.255**$^{+}$
	Time 2 Withdrawal	.106	.194	-.038
	Time 2 Compliance	.062	.019	-.098
Fathers' Conflict Resolution				
	Time 1 Problem Solving	.171	-.159	.065
	Time 1 Engagement	**-.244**$^{+}$	**.361***	**.254**$^{+}$
	Time 1 Withdrawal	**-.262**$^{+}$	.103	.016
	Time 1 Compliance	-.040	-.070	-.117
	Time 2 Problem Solving	.024	-.077	-.087
	Time 2 Engagement	-.031	.136	.195
	Time 2 Withdrawal	-.065	.076	-.114
	Time 2 Compliance	.063	-.090	**-.288***

*+ p< .10, *p<.05, **p<.01, ***p<.001*

Table 14: Final Estimation of Fixed Effects for Mothers' Conflict Resolution Styles Predicting Mothers' Rating of their First-Grade Child's Sibling Relationship (N=49).

	Time 2 Mother-Rated Sibling Relationships in Early Childhood					
	Positive Involvement		Conflict and Rivalry		Avoidance	
Demographic Controls						
Years Married	-.010	(.234)	**-.237**$^{+}$	(.119)	-.034	(.095)
Mothers' Conflict Resolution						
Time 1 Problem Solving	1.871	(.722)	**-2.190**$^{+}$	(1.173)	-.339	(.610)
Time 1 Engagement	-1.188	(1.304)	1.724	(1.054)	.201	(.514)
Time 1 Withdrawal	.068	(1.012)	1.061	(.883)	-.093	(.390)
Time 1 Compliance	-.490	(.871)	-.149	(.833)	.438	(.444)
Time 2 Problem Solving	.744	(1.275)	**-2.675***	(1.042)	-.718	(.475)
Time 2 Engagement	-1.051	(.917)	**2.258***	(.857)	.575	(.378)
Time 2 Withdrawal	.560	(1.005)	1.135	(.839)	-.154	(.331)
Time 2 Compliance	.282	(.751)	.380	(.553)	.100	(.317)

*+ p< .10, *p<.05, **p<.01, ***p<.001* (robust standard errors)
Standard errors in parentheses

Table 15: Final Estimation of Fixed Effects for Fathers' Conflict Resolution Styles Predicting Fathers' Rating of their First-Grade Child's Sibling Relationship (N=49).

	Time 2 Father-Rated Sibling Relationships in Early Childhood					
	Positive Involvement		Conflict and Rivalry		Avoidance	
Demographic Controls						
Fathers' Age	**.249***	(.101)	-.107	(.089)	-.033	(.052)
Fathers Conflict Resolution						
Time 1 Problem Solving	.762	(.951)	-.482	(.802)	.502	(.341)
Time 1 Engagement	-.543	(.840)	**1.533***	(.732)	.444	(.309)
Time 1 Withdrawal	-1.063	(.757)	.272	(.579)	-.176	(.263)
Time 1 Compliance	-.219	(.772)	-.330	(.740)	-.298	(.344)
Time 2 Problem Solving	-.382	(1.008)	-.214	(.911)	-.229	(.379)
Time 2 Engagement	-.205	(.669)	.822	(.544)	**.449+**	(.252)
Time 2 Withdrawal	.012	(.676)	.535	(.501)	-.250	(.263)
Time 2 Compliance	.033	(.629)	-.101	(.507)	-.354	(.253)

*+ p< .10, *p<.05, **p<.01, ***p<.001* (robust standard errors)
Standard errors in parentheses

Figure 1: Research Question 1

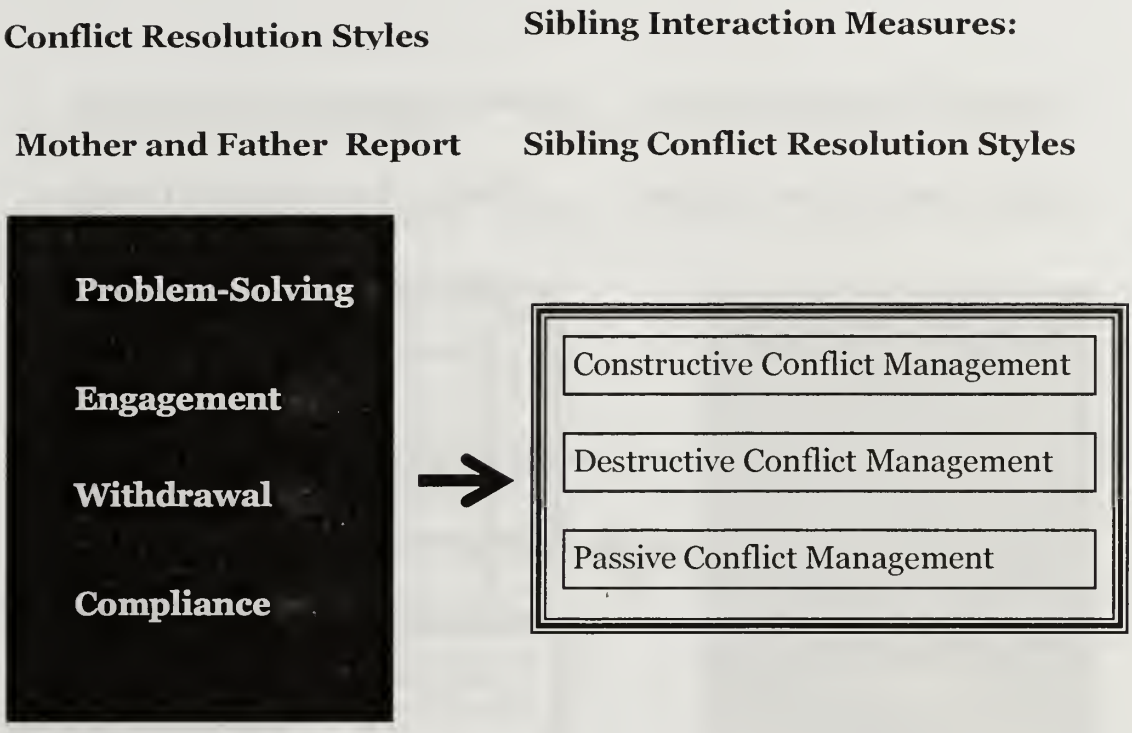


Figure 2: Research Question 1A

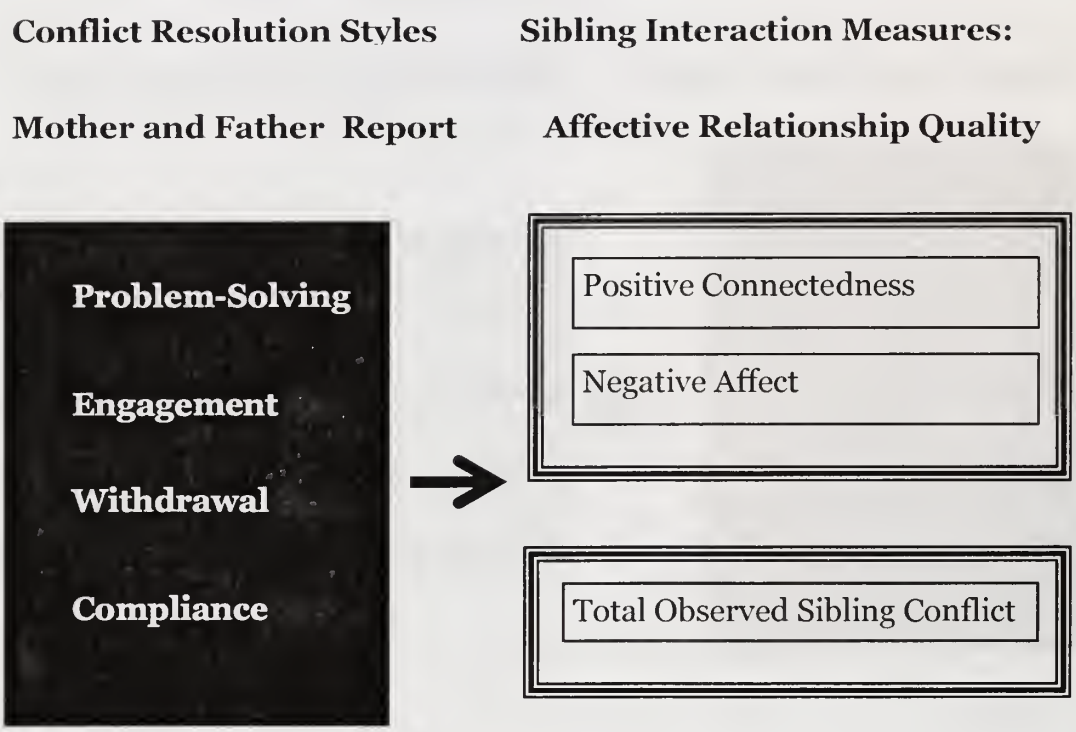


Figure 3: Research Question 1B

Figure 4: Research Question 2

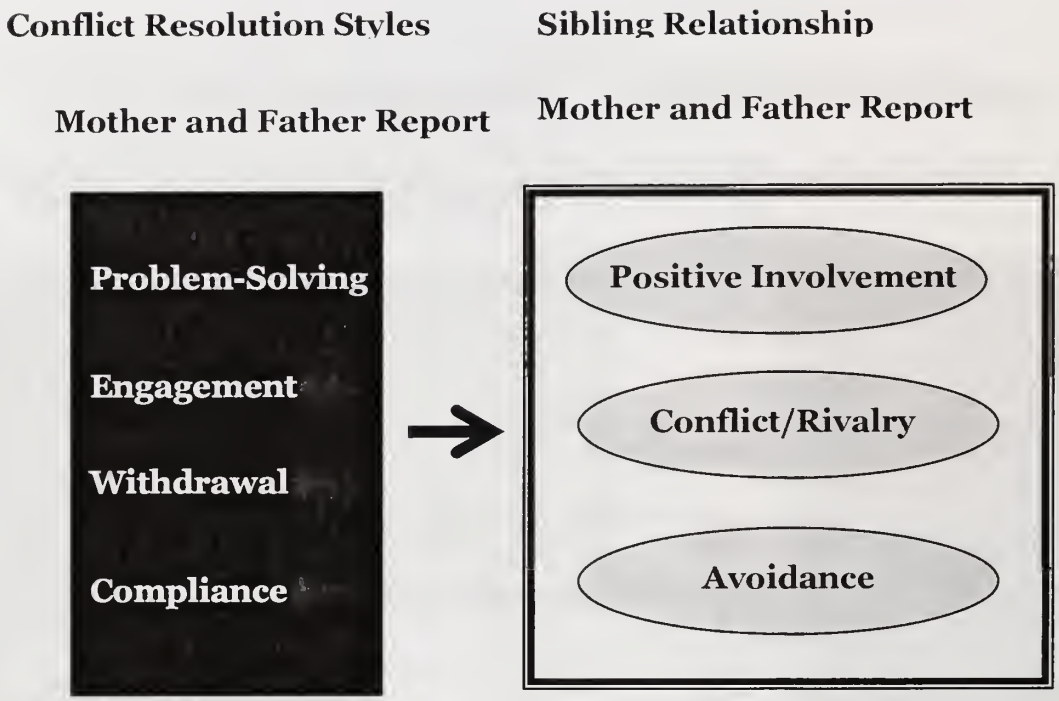


Figure 5: Research Question 2A

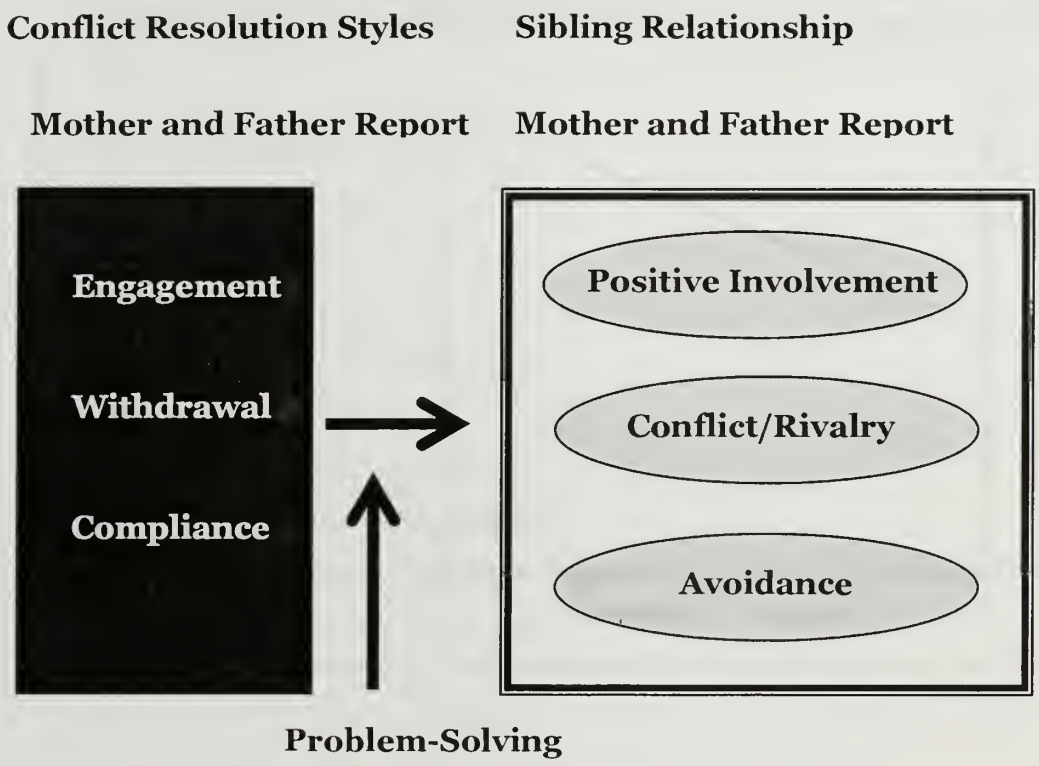


Figure 6: Interaction of Mothers' Time 1 Compliance and Problem-Solving Predicting Time 2 Sibling Positive Involvement.

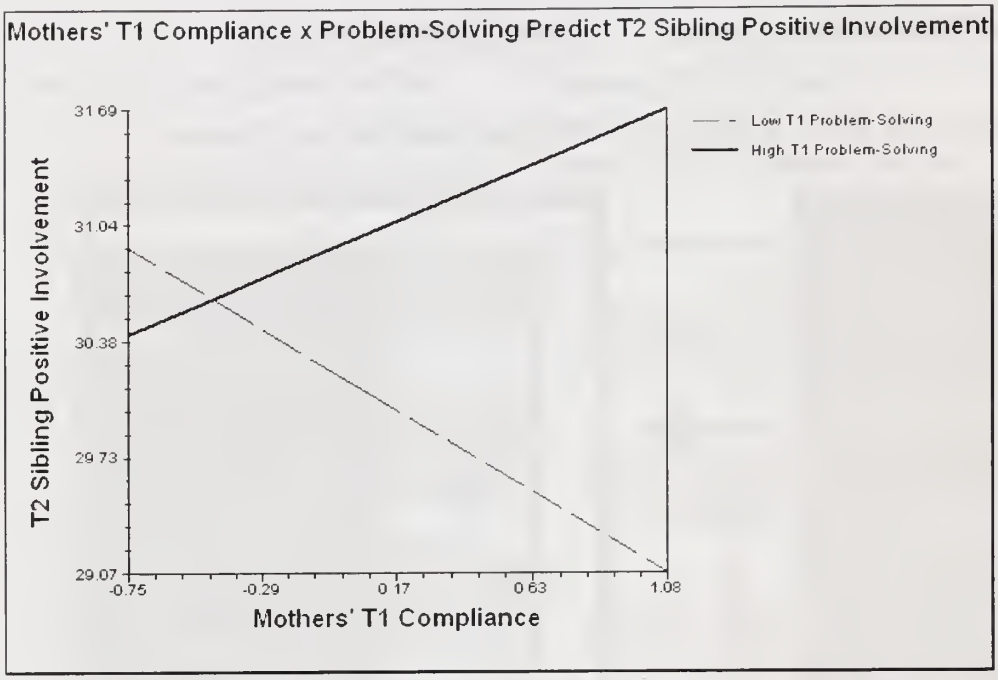


Figure 7: Interaction of Mothers' Time 2 Compliance and Problem-Solving Predicting Sibling Conflict.

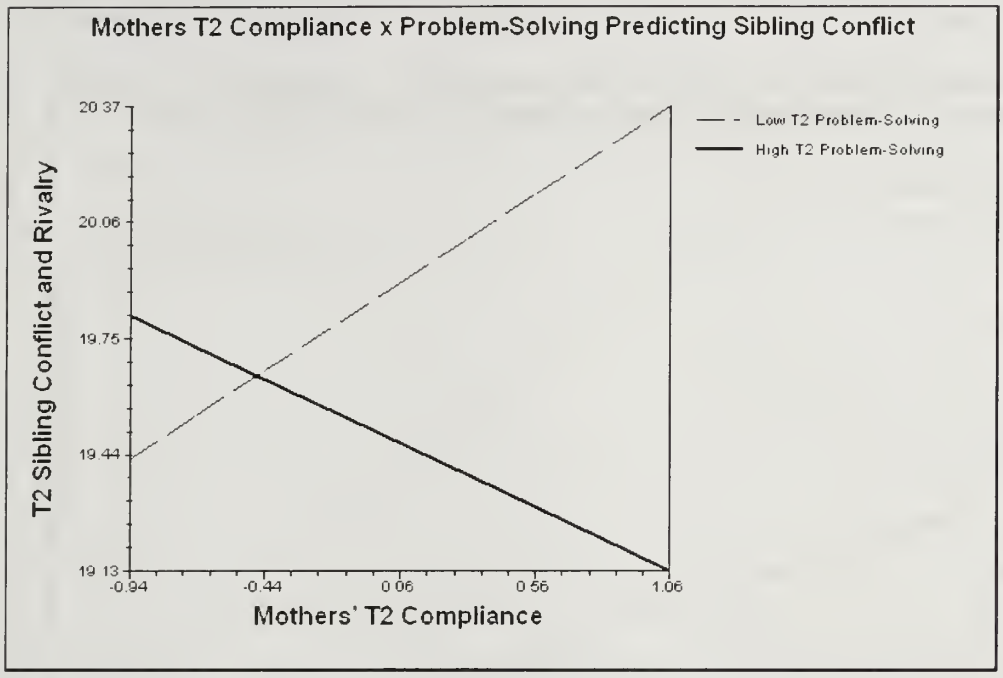


Figure 8: Interaction of Mothers' Time 2 Withdrawal and Problem-Solving Predicting Sibling Conflict.

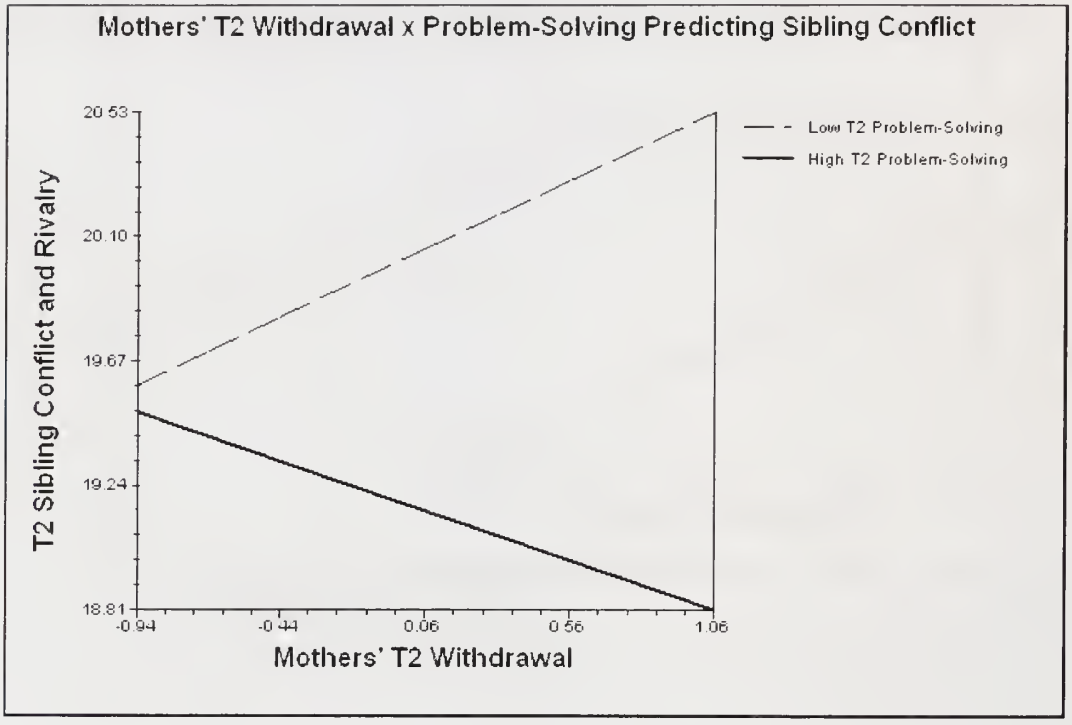


Figure 9: Interaction of Mothers' Time 1 Withdrawal and Problem-Solving Predicting Time 2 Sibling Avoidance.

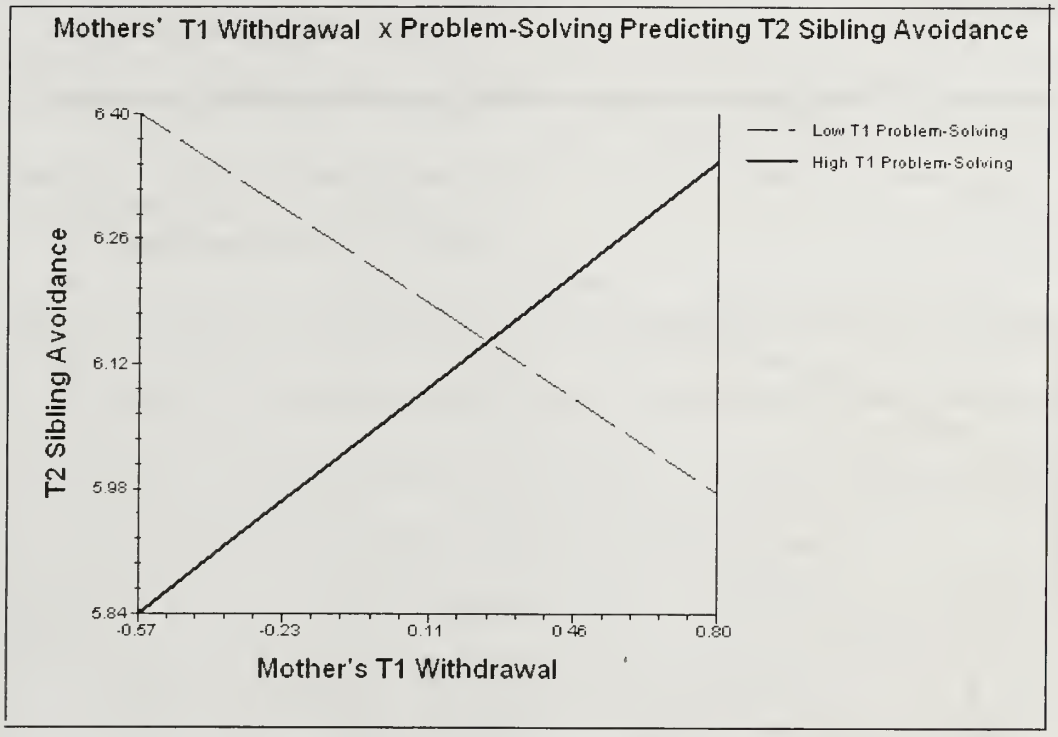
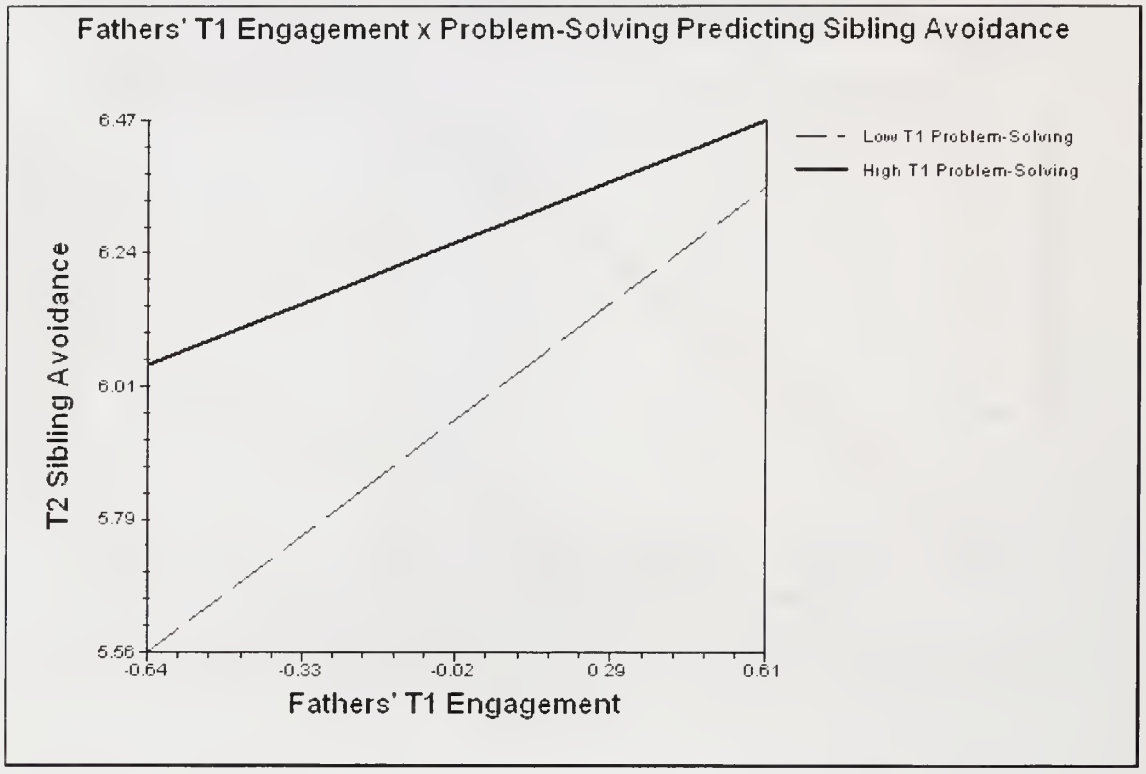


Figure 10: Interaction of Fathers' Time 1 Engagement and Problem-Solving Predicting Sibling Avoidance.



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